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Railway Age

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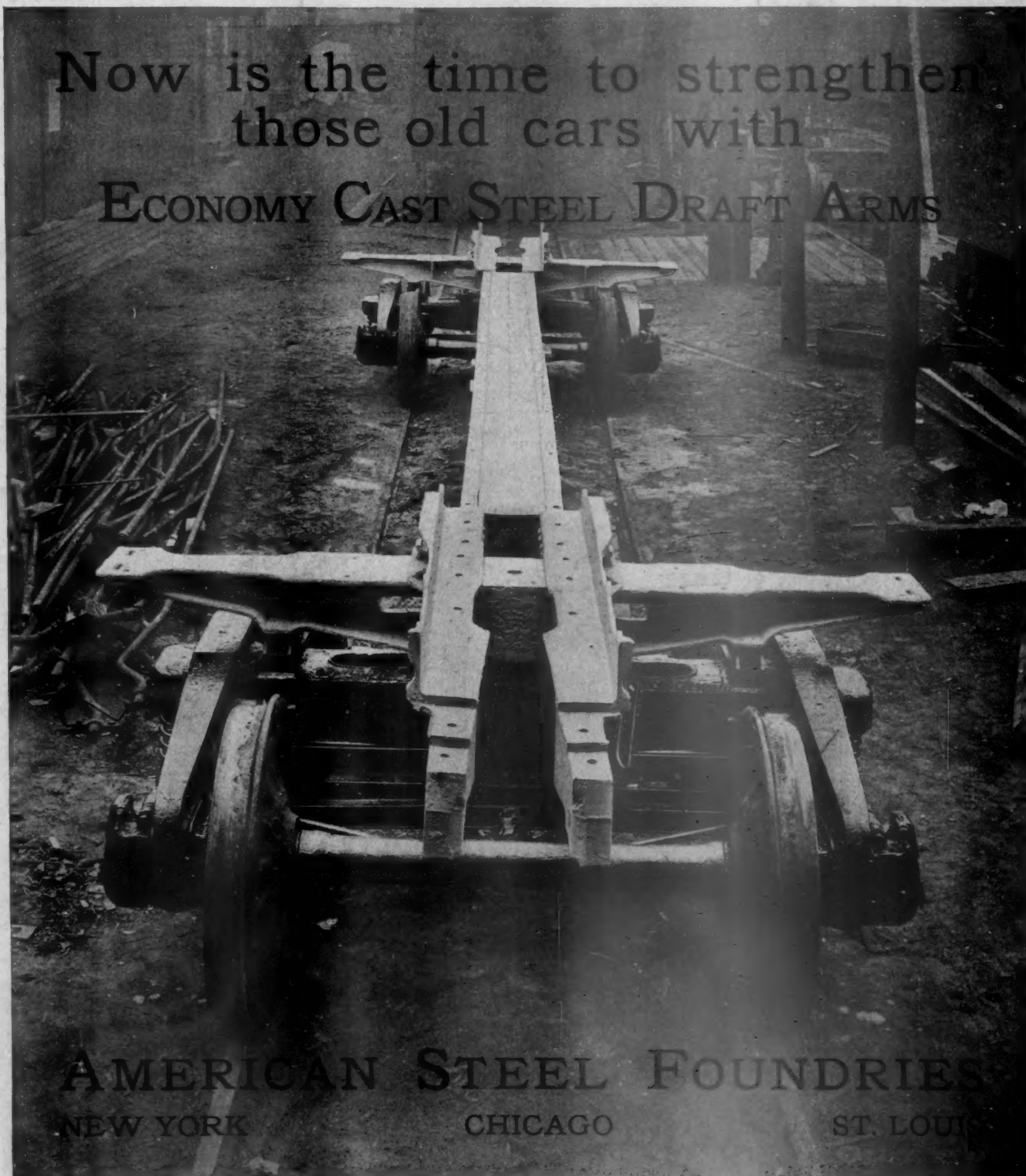
NEW YORK—FEBRUARY 28, 1919—CHICAGO

SIXTY-FOURTH YEAR

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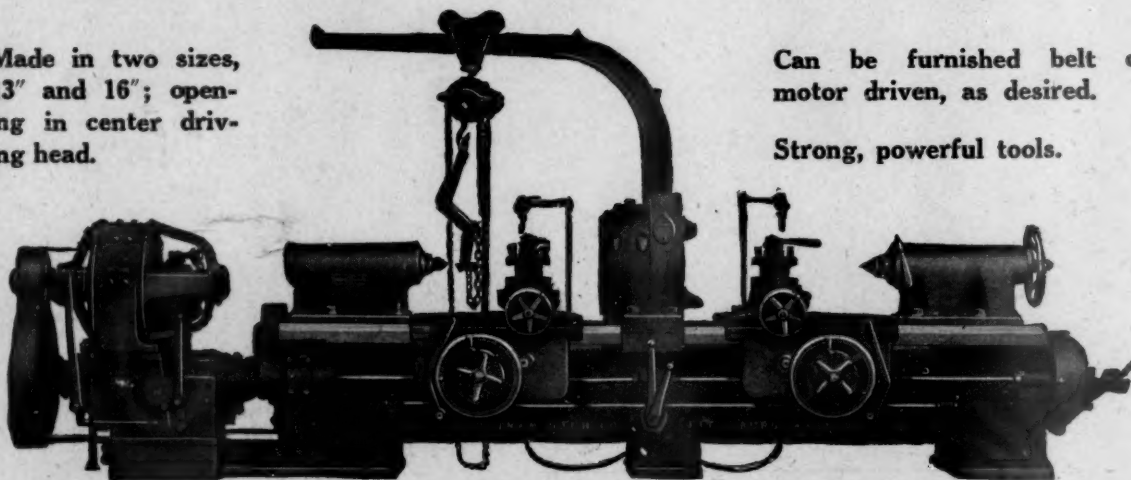
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EDITORIAL

Railway Age

Those who attended the meeting of the New York Railroad Club last Friday evening and who had any doubts in their

The Value of the Standard Statistics

minds as to the practical value of the standard operating statistics, must have left the meeting with these doubts pretty well cleared away. Professor William J. Cunningham, manager of the Operating Statistics Section of the Railroad Administration, told of the purposes of these statistics and of their advantages; in addition, he outlined the more salient features of the different forms. During the discussion reasons were advanced as to why the standardized statistics were of importance and value from the operating and engineering departments' viewpoints. The new forms were severely criticised by two of the speakers, but Professor Cunningham met their objections so fully at the close of the discussion that the meeting gave him quite an ovation. While he emphasized the value of the standard operating statistics for the purposes of administrative control, he showed clearly their great importance in securing improved results when properly used by the local officers. While they in no way interfere with initiative on the part of these officials, they furnish, with more or less promptness, an accurate measuring stick with which to gage their efforts. That the forms were not developed on a theoretical basis, but are eminently practical is indicated by the fact that similar data have been used to a greater or less extent on a number of roads with excellent results. Because they are based upon sound fundamental principles and are logically arranged, they make possible an intelligent and thorough analysis of operating conditions, thus helping to locate and eliminate lost motion and friction, and to develop the most economical and efficient methods. Not a few operating officers have been startled when the facts concerning the performance of the equipment and of operation were clearly and accurately placed before them. Another advantage of these statistics is that they make possible the setting of a definite goal toward which the men may be encouraged to aspire and which intelligent efforts on their part will make it possible to achieve.

The New York State report on the South Byron collision, noticed elsewhere, is a thorough and complete document. It

Report On South Byron Collision

is very long, but the author found, no doubt, that completeness and brevity could not be combined. This report should be specially useful to railroad directors, state commissioners and other persons in responsible positions who are inclined to evade the duty of reading a report like this because of their unfamiliarity with the details of signalling and train running. One reason why this country has so large a train-accident death list is the division of the responsibility for the safety of trains among such a large number of individuals—from railroad directors and congressmen down to repairmen and track-walkers—and a report intelligible to all classes has a distinctive usefulness. The outstanding feature of this report is the discussion of automatic train stops and audible signals. South Byron was a notable example of the class of collisions in which these expedients constitute the only "indicated" remedy, and the situation is here fearlessly and

trenchantly analyzed. It could not be dealt with exhaustively, of course; that would require a treatise; but Mr. Vanneman has set forth the principal issues very clearly, and any state or federal or railroad officer who has felt that he was in the dark on this subject can here find light for his path. Discussing the question of the cost of providing a safeguard to supplement our best visual signals, Mr. Vanneman states the obvious fact that during the past few years even our richest railroads—most of them—would have found it difficult or impossible to get the necessary money; which reminds us that the government has a very definite responsibility for the safety of passengers' lives, for it is the government that has limited the railroads' income. A railroad president who would spend a half million dollars for automatic stops has before him the very definite question, How many years shall I have to wait for an unwilling Congress or commission to permit me to recoup this expenditure?

After a fairly thorough trial of the table d'hôte dining car service by the Railroad Administration, it has been decided

Change in Dining Car Service

to discontinue it except where there are special and important reasons for not so doing. In many respects this action is to be regretted, although the administration is doubtless forced to take it because of the numerous complaints which it has received. One of the principal advantages of the table d'hôte system is that it makes it possible to serve the meals quickly, with a fairly good variety of food, and at considerably less expense than under the a la carte system. The very fact that the service is quicker has been criticised by those making long journeys, who feel that the slower service under the a la carte system is a distinct advantage in helping to break the monotony of the trip. On the other hand, the quicker service is a very distinct advantage when the trains are crowded and it is advisable to serve the diners as quickly as possible in order not to force some of them to wait an unreasonable time. A student of psychology claims that the greatest objection to the table d'hôte system is the fact that Americans as a class insist upon receiving individual attention and do not like to be forced to do anything. He suggests that if a choice could be given of the table d'hôte and the a la carte systems at the same time, very few people would order a la carte. The most serious objections to the table d'hôte system were made by mothers traveling with small children. It is rather pitiable to watch a small child served with a regular course, a large part of which may not be suited to its needs or tastes. While the dining car conductor is given a certain latitude in cases of this kind, he is told to stick as closely as possible to the table d'hôte meal and not to allow any variations unless, in his judgment, it is really necessary. The result has been that most of them have made no allowance for the children. Several dining car conductors who were interviewed, admitted that the table d'hôte system made it possible to serve the people more quickly and more satisfactorily and at less cost than the a la carte system, but that they would be greatly relieved to go back to the a la carte system, because it would relieve them of many arguments which were not at all pleas-

ing. While some of those travelers who do not care how much they spend for their meals may be glad to welcome back the a la carte system, those who enjoy a well-balanced meal at a reasonable price will greatly miss the table d'hôte meals.

The Situation Becoming Desperate

THE FOREST PRODUCTS SECTION of the United States Railroad Administration has done highly constructive work in preparing and putting into effect standard specifications for cross ties and for their treatment, and other measures tending to improve the quality of the ties used by the railways. These measures should be retained permanently, regardless of the form of railway control ultimately adopted. However, the primary function of this department is the securing of an adequate supply of ties and timbers to meet the requirements of the roads. This it is failing to do. The production of ties has fallen to such an extent during the year since the Forest Products Section has been in existence that maintenance men, particularly in the east, are becoming genuinely alarmed over the outlook.

A falling off in tie production last year would not have been surprising, owing to the shortage of labor and the unsettled conditions in all industries. But the manufacture of ties was even more seriously interfered with by the promulgation of several "reforms" by the Forest Products Section, designed to eliminate certain practices of long standing in the industry. Principal among these was the order eliminating the tie contractor, which destroyed the organization through which a large part of the ties had been secured in the past without building up any other organization to replace it. While we hold no brief for the tie contractors and do not overlook certain abuses which had grown up within their organizations, we do question the advisability of introducing such radical changes at a time when so many other conditions were tending to restrict the output.

As a result of these conditions the production of ties last year was not much over half that of normal years. Drastic as such a curtailment in supply was, the full effects were not evidenced on many roads which entered the season with their usually large stocks on hand. These have since been used and in large part have not been replaced. As a result the roads, particularly in the Eastern and Allegheny regions, now have few ties on hand at the opening of their season of tie renewals when they should normally have their largest supplies.

At a meeting of representatives of the railroads in the Allegheny region a few days ago, it was ascertained that the roads in that region, one of the smallest of the seven, were 11,000,000 ties short. Conditions in the Eastern region are even worse, while the roads in almost all parts of the country have less than their normal supplies on hand.

Ties are a primary necessity for track maintenance. Their deterioration is continuous. Their replacement should therefore be uniform. Railway men are familiar with these facts. Facing this shortage, they are resorting to measures which in many instances are worse than those which it is aimed to correct. Rumors are frequent of the lax inspection and incorrect grading of ties produced along the lines of the purchasing roads. The acute shortage is also leading to greatly increased prices. Only a few days ago the purchasing agent of an eastern road accepted without hesitation the offer of a shipment of Douglas Fir ties from the Pacific Coast (one of the few regions now producing a normal supply) at a cost of over \$1.80 each, delivered at New York. Roads which have used treated ties in large measure or exclusively are now using untreated ties because of their inability to hold the ties

out of track long enough to season and treat them properly. The effects these measures will have on maintenance costs in future years is evident.

Important as are the improvements which the Forest Products Section is endeavoring to make, it is even more essential that the roads be provided with the ties necessary for their proper and safe maintenance. No further time can be lost in the development of theories. Ties are needed and needed at once.

Vast Increases of Expenses Not Due to Advances in Wages

AS THE STATISTICS of the Interstate Commerce Commission and of the Railroad Administration regarding the operating expenses of the railways in 1918 become more complete they grew more startling. The *Railway Age* estimated that when complete statistics were available they would show that the total increase in expenses over 1917 was \$1,250,000,000, and that two-thirds of this would be due to advances in wages and one-third to other causes. The final summary of the Interstate Commerce Commission for the year 1918 which has recently come out, and which covers railways operating 234,000 miles of line, shows an increase in operating expenses for these railways of \$1,149,000,000. Director General Hines, in testifying before a committee of Congress last week, estimated that the advances in wages which actually had been charged into the accounts for 1918 amounted to \$583,550,000. The conclusion must be drawn that the increases in expenses in 1918 attributable to causes other than advances in wages were about \$565,000,000, or almost one-half of the total. In view of the "economies" which Mr. McAdoo anticipated would result from unification, and which the advocates of government ownership predicted would result from government operation, it will probably astound the public to learn that the increase of expenses during the year would have greatly exceeded a half billion dollars without any advance of wages at all.

This showing accentuates the uneasiness that must be felt as to the future of railway net earnings. It has been estimated that the advances in wages made under government control have amounted to over \$800,000,000 annually, and much discussion in our own columns and elsewhere has been predicated on the understanding that substantially this amount was charged into the accounts for 1918. It also has been understood that further advances of \$60,000,000 to \$100,000,000 are yet to come. Why the discrepancy between these figures and the one which Mr. Hines gave? It is largely explained by the following note which is given in Mr. Hines' table regarding the estimated advance in wages in 1918: "The statement does not include the effect of increases covered by Supplements 12 and 13 which were promulgated in December, 1918, with regard to which reliable data are not available." Presumably, therefore, the increases covered by Supplements 12 and 13 to telegraph operators and some other classes of employees, some of which are retroactive, are not included in the operating expenses for 1918 as reported by the Interstate Commerce Commission. Therefore, either part of these advances will yet have to be charged back into the 1918 accounts, thereby increasing the operating expenses shown for that year, or charged into the operating expenses for 1919.

In any event, the amount of wages paid in 1919, unless there should be a drastic reduction in the number of employees, will be far larger than the amount included in the operating expenses for 1918, as reported by the Commission. Assuming the same number of employees, if the wage advances made under government control should prove to run

at the rate of \$800,000,000 a year, the total wages paid in 1919 would be over \$200,000,000 more than in 1918, while if they should prove to run at the rate of \$900,000,000 a year, the total wages paid in 1919 would be over \$300,000,000 more than in 1918.

This \$200,000,000 to \$300,000,000 additional wages must be included in operating expenses at a time when the traffic handled and, in consequence, the total earnings made, are declining. To estimate with any confidence what future earnings and expenses will be when both earnings and expenses are being affected by such influences is impracticable. Theoretically, it ought to be possible to effect large economies, but as a practical matter it will be very difficult, especially under government operation. The railways are overmanned in certain departments, and there ought to be a sharp reduction of the number of employees in those departments, accompanied by a marked increase in efficiency of those retained. It is, however, very difficult substantially to reduce forces under government operation, because it is naturally assumed that under government operation there should be a large measure of consistency and uniformity in the methods used on all the railways, and the varying conditions existing on different railways are not adapted to consistent and uniform reductions of employees. Besides, there is a large amount of deferred maintenance, and there ought to be an increase of expenditures for maintenance.

Nobody familiar with railway conditions in general can study the available statistics regarding earnings and expenses without being driven to the conclusion that regardless of the advances in wages government operation has been more expensive than private operation would have been. What is even more pertinent to the present situation is that nobody can study the figures without being driven to the conclusion that with existing rates, prices and wages it will be difficult for either the government or the railway companies to operate the railways and earn a reasonable net operating income in 1919.

These two conclusions once reached, there should be little difficulty, it would seem, in deciding upon the general policy of dealing with the railways which should be adopted. They should be returned to private operation as soon as practicable in order that the country may benefit by the more economical management which the companies will provide. Before they are returned, however, there should be adopted legislation which will protect the companies from financial disaster due to the vast increases of expenses which have occurred under government operation. The public wants the railways returned to private operation. The great difficulty in the way is the enormous increase in expenses for which the government itself is responsible.

We frequently hear it said that if the railways are returned to private operation the government will not give the companies guaranties of net return in any form—that they will have to take their chances with the regulating commissions and the courts. But why should the companies be told they must take their chances with increased expenses the government itself has piled up? The railway companies took their "chances" with the regulating commissions and the courts before the war with the result that the expansion of railroad facilities almost stopped. If the railways should be turned back to their owners, and existing rates should prove insufficient, the result might be the bankruptcy of many companies and a financial panic before the regulating bodies, even though disposed to do so, could make readjustments of rates which might prove to be necessary. It would be the public as much as the companies that would be taking "chances," and very dangerous chances, if a policy which did not recognize actual conditions should be adopted.

The railways should be returned soon to private operation because under private operation they will be run more eco-

nomically and give the public more satisfactory service, provided they are fairly treated. They should be protected from financial disaster either by specific government guaranties of net income or by legislation such as that proposed in the Warfield plan requiring the regulating bodies to so fix rates as to yield an adequate return, because if this is not done they may and probably will be unable to accomplish for the public the results which the public wishes accomplished, and failure to accomplish which will hurt the public as much as it will the companies.

Government Operation An Unauthorized Experiment

G. M. FREER, president of the National Industrial Traffic League, gave a pointed answer to some of the arguments advanced by Mr. McAdoo and Mr. Hines in favor of another five years of government operation of the railroads when he urged the Senate committee not to heed the suggestion that government operation has not had a fair test. He made the point that the people have never authorized any test of government operation, and further, that they never would have consented to such a test as has been made of it had it not been for the war emergency. He expressed the opinion that the Railroad Administration might, if given further opportunity, show an improvement over the results of its first year, but declared that the whole system is wrong and should be abandoned as soon as practicable.

The primary purpose for which the railroads were taken over has been accomplished and in a fairly successful manner, considering the matter entirely from the standpoint of meeting the war emergency. In doing so, however, the Railroad Administration has made itself more unpopular than the railroads have been for a long time, and the former director general and the new director general who has assumed the accumulated load, naturally would like to have an opportunity to vindicate the policies that have been followed. Mr. Hines has sought to explain the flow of criticism that has been unloosed since the signing of the armistice removed some of the restraints upon free speech, by attributing it to the natural reaction from the restrictions and inconveniences experienced during the war. It might be more correct to attribute these criticisms to the fact that Mr. McAdoo persisted in ignoring the emergency character of the autocratic powers conferred upon him and in taking advantage of them to conduct an unauthorized experiment in railroad unification and standardization in the midst of a great war.

He seemed to regard not merely government control, but government operation as a desirable thing in itself, not as a necessary evil forced upon the country by the short-sightedness of its former policies of regulation. The railroads had been shackled and throttled until they could no longer function properly under the difficult conditions confronting them, which, as Mr. Willard has pointed out, were not all matters of railroad operation, and the government, having got them into such a situation, had to step in and assume the burden of responsibility. If Mr. McAdoo had been content to confine himself to the object for which he was placed in charge of the railroads—or the officially stated object—he might now be receiving congratulations upon his success, in spite of any inconvenience to the public or increased expense, instead of being put in a position to demand five more years in which to allow his policies an opportunity to make good.

But the task of conducting transportation to win the war was not big enough for him. He must also conduct an experiment, which he was so confident would be successful, that

while adding some \$1,200,000,000 to the operating expenses in a year he kept bragging about the "enormous economies" he was effecting by unified operation. These economies, so far as the regional directors have been able to calculate them in dollars and cents, have amounted to about \$91,000,000. Many of them cannot be continued under normal conditions, and they also include such items as the saving of \$4,000,000 or \$5,000,000 in officers' salaries by charging them to the corporations or to the revolving fund while the expenses of the central and regional organization built up by Mr. McAdoo have been \$3,528,946 for a year, and for several months have been running at the rate of \$6,000,000 for the year.

If Mr. McAdoo had not laid such great emphasis on the comparatively trivial economies that were being effected, or if they had been regarded merely as a slight offset to the war time cost of railroad operation, the increase in expenses might now attract less attention.

By airily ignoring the mounting expenses, and by referring to the rate increase as a war emergency measure to be followed later by reductions, while promising to maintain the high wages that chiefly made the increase necessary, Mr. McAdoo succeeded for a time—a time during which the slightest criticism of the government was regarded as pro-German—in creating a popular impression that he was "showing up" the former railroad managements. Neither he nor Mr. Hines should resent the criticisms that are now being made as the results for the year become known, or regard them as representing a lack of appreciation of the creditable things that the Railroad Administration has done; they should attribute them mainly to the wide discrepancy between the results which actually have been secured and the results which it was predicted the unauthorized "test" would produce.

From an operating point of view, the principal purpose for which government control was adopted was to enable the railways to handle a large amount of essential traffic during the war, and to handle it better. Mr. McAdoo deserves full credit for having placed in direct charge of operation railway men whose experience and ability were beyond question. It would have been difficult, on the whole, to have made better selections for the operating positions at headquarters in Washington, for regional directors, for district managers and for federal managers, than he made. Furthermore, it would be impossible to express too strongly the appreciation that the nation should feel and show for the loyalty, energy and ability with which the railway men who took important positions in the Railroad Administration did their work. They did not create the organization; Mr. McAdoo created it; but they did their best to make it a success; and in spite of its inherent faults the railway men did make it work well enough to move the traffic.

Unfortunately, the system adopted by Mr. McAdoo was obviously designed far more to conduct an experiment to prove the correctness of his theory of "unified government operation" than merely to meet the war emergency. The result was the development of an over-centralized departmental organization, under which, even with the ablest personnel, the railways could not be operated efficiently and economically, and which, with a less able personnel would have been absolutely ruinous.

The nation has good reason to thank railway officers trained under private management for having prevented Mr. McAdoo's "experiment" from causing all the calamitous results it might have produced; and at the same time it has good reason for condemning him for having undertaken, in the midst of a great national emergency, an experiment which has had many very bad results in spite of all the antidotes the able and experienced railway men in his organization have been able to administer.

Efficiency in Telegraph Service

IS A SAVING of several thousand dollars a year by a properly censored telegraph service worth consideration? In the handling of railroad business, three methods of communication may be said to exist, viz., the telegraph, the traingram and the railroad mail service. The telegraph is used for quick action; the traingram for important matters on which a delay of a few hours will not be serious, and the mail service is used for routine correspondence.

Unless a railroad has a properly supervised telegraph service the wires become congested with messages which should properly have been carried by train. As a consequence, the most efficient use cannot be made of the railroad wires and there is a corresponding decrease in the efficiency of the system, as delays are experienced in the transmission of important messages, while the increased number of messages requires a large force of operators.

The traingram service (some form of which is in use on most railroads) should be effective in order to retain the confidence of officers and employees. But it is often remarked that business may as well be handled by ordinary correspondence as by traingrams because little more attention is given to the proper handling of such letters than to ordinary mail. Consequently, it is felt that more consideration will be given to a telegram; and as handing a message to the operator is the easiest way to handle the matter, a message is sent. Another reason for the reduced efficiency of traingram service is the fact that the traingram envelopes are allowed to be used by every employe, and when traingrams are employed little or no check is obtained on the sending or receipt; therefore, they are too often considered as of little importance, and the recipient is liable to be slow in acting on the contents. Rather than permit these conditions to exist this service might better be eliminated. However, a proper censoring of messages and supervision of traingram service can readily correct these conditions, allowing a more efficient use of both classes of service, with a saving in the number of employees needed.

Elsewhere in this issue there appears an article outlining the methods employed in handling this class of service on one railroad. The methods used there give to each class of service the importance it deserves, with the result that an estimated saving of approximately \$10,000 a year is accomplished, in addition to greatly increased efficiency in operation. The methods employed are worth careful consideration by other roads having this class of service in use.

New Books

Lining and Loading Cars of Potatoes for Protection From Cold. By H. S. Bird, investigator, and A. M. Grimes, scientific assistant, 26 pages, 22 illustrations, 6 in. x 9 in. Published by the United States Department of Agriculture, Bureau of Markets, Washington, D. C., Markets Document 17.

Approximately 75 per cent of all cars prepared to protect potato shipments from cold during the winter months are either lined or loaded incorrectly. Protection from cold depends largely upon a constant current of warm air from the heater directly to the ceiling, spreading between the ceiling and the top potatoes, thence through openings at the opposite end of the load down to the space beneath the false floor and from there under the false floor back to the heater again.

The pamphlet explains methods of lining and loading potatoes in the four principal types of cars with heaters, and refrigerator cars without heaters under favorable shipping conditions.

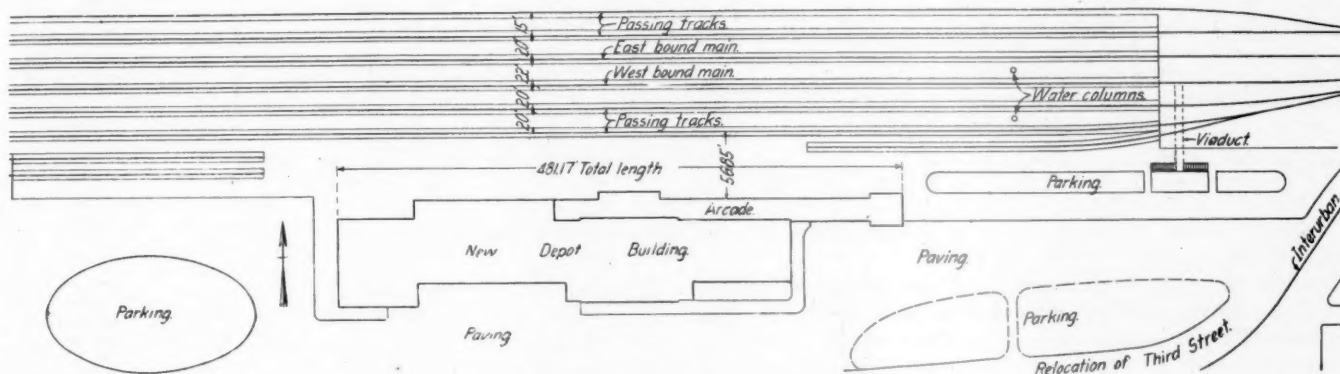
A New Station for the Santa Fe at San Bernardino

Handsome Structure Affords Accommodations for Passengers,
Railway Eating House and Division Officers

THE ATCHISON, Topeka & Santa Fe Coast Lines have recently completed a new passenger station, eating house and division headquarters building of unusual design at San Bernardino, Cal. In accordance with the Santa Fe's policy to erect stations typifying the spirit of the locality, the new San Bernardino structure has been built in the mission style, which is so expressive of the Southwest. The project had its inception with the destruction of the old

upon the purchase of sufficient property to permit of a relocation of the street south of the new station site. The freight house has also been moved to this new property on a location west of the passenger station.

As shown in the photographs, the building presents an unusually pleasing appearance. The predominating feature in the design is a group of four flat domes surmounting the central portion of the structure. These domes receive minor



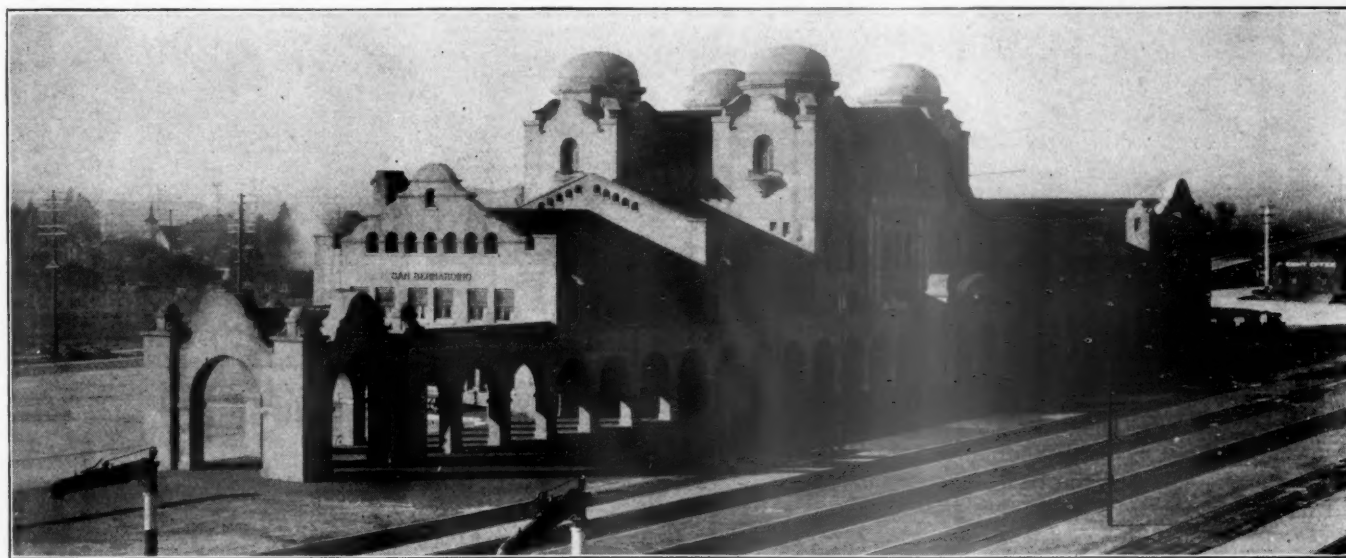
Layout of the Station Grounds

station building at that place by fire in November, 1916, and involved a change in the arrangement of facilities, including a new site for the passenger station, and the movement of the local freight station to another location. These changes, including the preparation of the site, occupied about two years and involved a total expenditure of about \$850,000.

The construction of a building adequate for present and

repetition on the west wing of the building and also on a shelter structure at the east end. In place of a canopy or train shed, the track side of the structure is embellished by a covered arcade consisting of a succession of semi-circular arches extending each way from the track entrance to the waiting room. The roofs are of red terra-cotta tile.

Passing into the station from the track side the passen-



The Station from the Track Side, Eating House End

estimated future needs necessitated this change in site, and the only available location that seemed to meet the situation was one on the other side of Third street bordering the railroad right-of-way. In order to make this site available it was necessary to secure the vacation of this street for a distance of 1,875 ft., a change which was permitted by the city

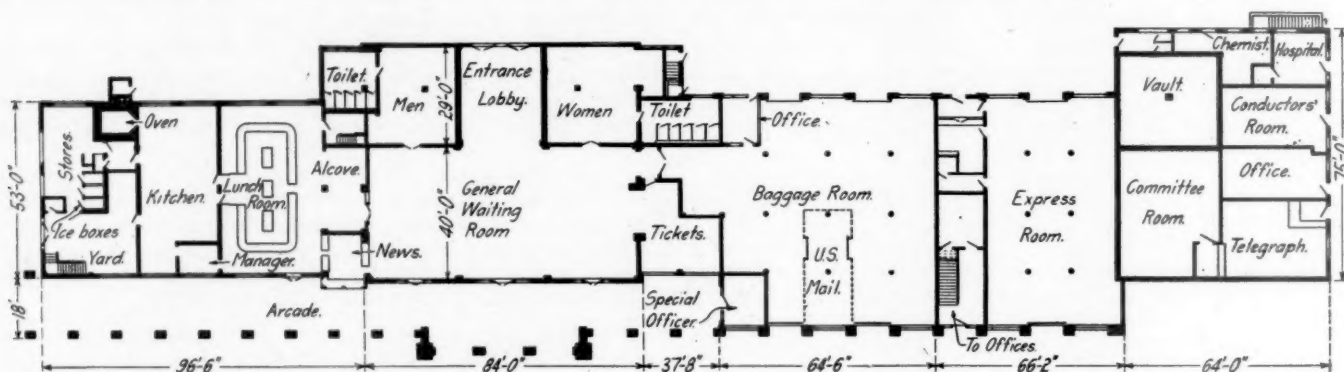
ger enters the main waiting room, 80 ft. long, 40 ft. wide and 22 ft. high. Directly opposite this entrance is a 24-ft. corridor leading to the street door, while on either side of this corridor are separate accommodations for men and women. The walls of the waiting room and the entrance lobby are paneled in art tile wainscot to a height of 9 ft.

The floors are of quarry tile, while the ceilings are laid off in heavy beamed panel work. Special convenience in handling the business of the passenger is afforded by the position of the ticket office at the west end of the waiting room, adjacent to the baggage room, so that it was possible to place the baggage counter immediately adjacent to the ticket counter. The passengers are served at the latter without any grill or top enclosure.

At the end of the waiting room opposite the ticket office

known as Lytle creek, which later had been diverted into another channel. To bring the site to grade required 75,000 cu. yd. of earth filling. It also introduced a complication in the building of the central part of the structure and entailed the extending of the foundations to a depth of 28 ft. below the first floor level. The building is heated by a vacuum steam-heating system.

One of the drawings shows the location of the station with respect to the tracks and the new location of Third street.

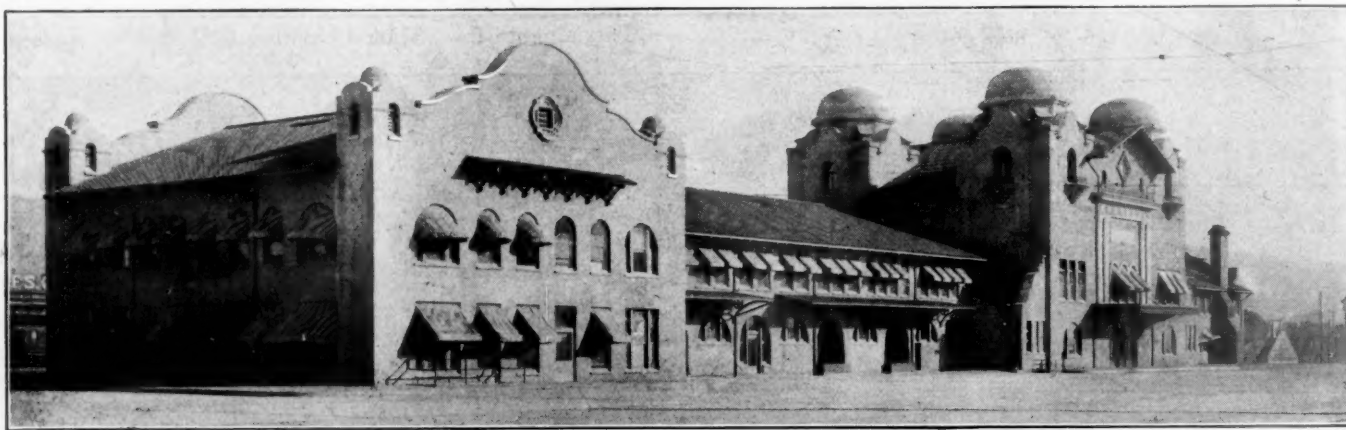


First Floor Plan of the Station Building

a double door leads to the lunch room which occupies a space 30 ft. by 53 ft., with an additional entrance direct from the arcade. This room has an interior finish similar to that of the general waiting room, while the lunch counter has a tile front with a white glass top. An alcove adjoining this lunch room provides space for dining tables. A news stand occupies space between the waiting room and the lunch room adjacent to the track side of the building. Beyond the lunch room a space 30 ft. by 53 ft. is devoted to the workrooms of the restaurant, including kitchen, manager's office, kitchen yard, storeroom and bake oven. The entire space above the

The space between the building and the nearest passing track, 57 ft., has been laid with white paving brick, and between each passenger track five platforms averaging 1,100 ft. long have been laid with paving bricks. The city side of the station has also been laid out with paved driveways and enclosed parking spaces, so that altogether 280,000 sq. ft. of street paving, 17,870 sq. ft. of cement sidewalks and 3,457 lin. ft. of cement curbs were required. The project also entailed the construction of a steel viaduct for vehicle traffic and a viaduct for foot traffic over the tracks.

This structure was designed and built under the direction



View of the Building from the Street, Office Wing in the Foreground

first floor of this wing of the building is used as living quarters for the employees of the eating house.

Ample space is provided in the building for the division railway offices. With the exception of the eating house wing, the entire second floor is equipped for office use, while additional office space is provided on the first floor of the west wing for a committee room, storage vaults, telegraph office, conductors' and brakemen's room, two additional office spaces, an emergency hospital and a toilet room for baggage and express employees.

The building is of permanent construction, being largely of reinforced concrete, although a structural steel frame is used under the central portion to support the four domes. Originally a large part of the site was the bed of what was

of W. H. Mohr, architect for the Santa Fe Coast Lines, and under the general supervision of G. W. Harris, at that time chief engineer of the Coast Lines, and now chief engineer of the Atchison, Topeka & Santa Fe corporation.

Return of telephone and telegraph properties to private management by June 30 is recommended in a letter to President Wilson by Charles E. Elmquist, president of the National Association of Railway and Utilities Commissioners, made public last week. "The net results of six months of operation by the Postmaster General of these wire systems," said the letter, "is inferior service and very substantial increases in charges to the public. No military necessity can now be pleaded in support of government control" * * *

Why Test Should Be Made of Government Operation*

Suggestions Also as to What Additional Features Are Necessary to Give It a Fair Trial

By C. A. Prouty

Director of Public Service, United States Railroad Administration

FOR 22 YEARS I have been associated with the federal regulation of railroads, and never in all that time has the railroad problem been in such utter confusion as today. It is highly desirable and perhaps possible that out of the present uncertainty may come some permanent disposition of this question. To that end it is desirable that all phases of the subject shall be fairly presented and fairly considered.

I have never been an advocate of government ownership or government operation. I have, however, always realized that this was the only possible answer to many of the difficulties surrounding our so-called railroad problem. As I read the papers and observe what is transpiring before Congress, it rather seems to me that there is a disposition upon the part of unthinking persons, fostered with great skill by those interests which profit by private ownership, to eliminate the possibility of government operation. It seems to be assumed that government operation has been tried and failed and that no further consideration need be given to this subject.

A majority of the world's railways outside the United States of America are owned or operated, one or both, by the government. In recent years there has been a continual progress in favor of government operation, and in no well-considered case has any nation ever gone from public to private ownership. England in the past has been unalterably opposed to every suggestion of public ownership, but I am told that, as a result of the war, public sentiment will insist upon the nationalization of railways. I feel that the question is one for serious consideration, and as an insignificant contribution to the discussion I desire to affirm three propositions:

1. Government operation in the United States under war conditions was not a failure, but a success.
2. There has been up to the present time no fair test of government operation under peace conditions.
3. Advantage should be taken of the present situation to make such a test, and the public should suspend its judgment until the result of that test is known.

I.

The government took over our railroads for two purposes. First, to stabilize the financial condition of the railroads. The war produced a most serious and unfortunate effect upon all public utilities. As a rule, the rates of such utilities were fixed and could not be immediately increased. Their operating expenses enormously advanced. The result was to bring upon all financial disaster and to produce in many cases absolute bankruptcy. The three great express companies which were not taken over by the government all operated for the first six months of the year under a heavy deficit. The Adams company lost in that brief period \$6,000,000, more than one-half the value of all its operative property.

The railroads alone were taken care of. Their security holders are being paid a sum equal to the largest earnings

ever known in the history of these properties. Broadly speaking, interest has been paid upon every security and a dividend declared upon every stock which had been regularly paid for the last three years. The first purpose of government control has been abundantly accomplished, and yet these railroad gentlemen are virtually saying to the country that the government which has protected them from bankruptcy in the hour of their financial stress and is today paying them a most liberal return upon the value of their property is no better than a ravening wolf which is seeking to mutilate and destroy those properties.

The second purpose was of a different character. This government was engaged in a deadly war. It must act speedily. As a part of that action certain transportation by rail was imperatively needed. Food must be taken from the point of production to the port of embarkation with which to feed our starving allies and maintain our own troops. Raw materials must be carried to the munition factory and the completed product transported to the port. Supplies for the erection of cantonments, troops to those cantonments and from those cantonments to the port must be handled. The railroads under private ownership had broken down. They were not rendering and they could not render this service. To obtain that service by rail which must be had, the government was compelled to take over these agencies of transportation.

Now, the government did those things which must be done. I spend no time in detail, but I simply say that the things were done—the food was carried, the munitions were produced, the troops were handled—and all this never could have been done by railroads operated through private ownership. This is a fact which can not be disputed. The second purpose of government operation was therefore accomplished.

II.

You say that the methods of the government were autocratic. Of course they were. War is not a pastime. Every military operation to be effective must be autocratic, and the operation of these railroads for the time being was part of a military scheme. What had to be done under war conditions is no indication of what might be done under peace conditions.

There never has been, up to the present time, any fair test of government control in times of peace. Immediately after the signing of the armistice the director general resigned. With that, the enthusiasm of his administration vanished. The director of operation, next in importance to the director general, also resigned. The director of capital expenditures and the director of inland waterways followed suit. There was a letting go all along the line at the top, and this permeated the whole administration. Under these conditions it is impossible, as every one must know, to maintain morale or discipline or to secure effective operation. You must agree with me, therefore, that up to the present time there has been no fair test of the ability of the government to render a satisfactory and an efficient service in times of peace and that my second proposition is well taken.

*From an address at the annual meeting of the Atlanta Freight Bureau, Atlanta, Ga., January 17, 1919.

III.

This brings me to my third proposition, which is that before the public passes judgment upon this railroad problem there ought to be an actual test of government operation under peace conditions, for the reason that the doubtful questions connected with government operation can only be answered by an actual test. To make this plain, I must say a word as to government operation itself.

And first of all I desire to impress it upon you—and it should never be forgotten in all these discussions—that the thing itself about which we are talking, the rendering of a transportation service by rail, is in essence a function of the government. This has been so declared by the Supreme Court of the United States, and the principle is accepted in all our present-day treatment of the railroads. Why, if this is a government function and if the government finds it necessary in case of private operation to exercise this measure of supervision and control, should not the government discharge that function itself?

It would not be possible today, under present world conditions immediately following the conclusion of the war, to finance the railroads of this country upon a 4 per cent basis; but if the past is to be taken as any guide to the future, if our experiences even of the present are at all convincing, it would be possible for the government in the immediate future to convert the securities of our railroads into a 4 per cent government bond or a 4 per cent railroad bond guaranteed by the government. The net revenue, therefore, which the government requires, and the only revenue which it requires, is a sufficient income to pay 4 per cent upon the value of these properties.

Turn, now, to the private side and listen, as I have listened for many days, to the pleas of these railroad gentlemen for additional revenues. They will assure you that it is not possible to maintain their credit, to provide for the development of their properties, which must be done if the public is adequately served, without a return of substantially 9 per cent; and I am bound to admit that what they say is not without force.

The railroad finances of this country are not in satisfactory shape and they have been continually growing worse in recent years. But little money has been raised by the issue of stock. New money has been provided mainly by mortgage security. The margin between value and the amount of the mortgage has been continually shrinking. The time has already come when many of our railroad companies can no longer borrow additional funds, and the time will come sooner or later when nearly every company will find itself in that condition. Additional railroad facilities must be provided, and if those facilities are to be furnished by the railroads themselves, they must, in my opinion, either receive direct assistance from the government or be granted the right to impose rates which will yield an income beyond a fair return upon the value of their property and beyond what they have been receiving in the past.

If it be assumed that 9 per cent is the correct figure, you have the difference between 4 per cent, which the government must pay, and 9 per cent, which must be paid to the private owner, or 5 per cent. The value of our railroads upon the basis of pre-war prices is somewhere between \$15,000,000,000 and \$20,000,000,000. Five per cent means, therefore, between \$1,000,000,000 and \$750,000,000 annually. The people of this country start out, therefore, by paying the private owners of this property that sum to discharge for them this public function.

I do not say that this may not be best. Upon the contrary it may even be a good investment, but I desire to call your attention clearly to the fact that the government could save upon the face of things annually by operating these properties itself this enormous sum.

It is true that the effect of this might be somewhat ameliorated in various ways as I have myself elsewhere pointed out, but I know of no way which does not involve the handing over to the private owner of many millions each year which the government itself might save.

Another question which must be solved if these railroads are to be passed back to their owners is that presented by the short line—the weak sister. All over this country, but perhaps especially in the Southeast, are railroads from 25 to 150 miles in length which are known ordinarily as short lines. They are independent properties, having no connection with any larger system. They connect with some trunk line, but there is no financial relation between the two.

In the past these lines have managed to eke out a precarious existence, but the recent increases in operating costs which they have shared along with larger systems have brought them to the pass where earnings are no longer sufficient to pay operating expenses. Almost every day there comes to my desk at Washington a suggestion that some one of these lines must go out of business. Its equipment is to be sold, its rails are to be taken up, for the reason that under the highest rates which can be applied revenues will not equal the cost of operation.

These lines are a vital part of the existence of the communities which they serve, and which can not normally exist without them. Some way must be devised by which their operation can be continued. I have always believed myself that the railroads of a given section, and perhaps of the entire country, must be considered as a whole. This little railroad transports the cotton grown along its line for but 50 miles, but that cotton is subsequently transported over other railroads 1,000 miles to the mill where it is consumed. The supplies which that mill uses, the cloths which it produces, are all the subject of transportation by rail. The articles which are consumed in the community served by this little railroad, the fertilizer, the boots and shoes, the groceries, everything, are only handled a few miles by that road, but they have all involved before they reach that road a great amount of transportation by rail. Now, it is not possible to shake this short line free from every other railroad in that section or in the country and say that the rates upon it should be sufficient to maintain the property. In essence your short line is a part of the railroad system of this nation and must be taken care of as such. The difficulty may be in a degree mitigated, but the only perfect answer which leaves nothing to be desired is that the government operate these railroads as a whole, applying just and reasonable rates, and that every part of the transportation system of this country shall contribute properly to every other part.

Another matter which must be dealt with is this general question of unified operation. It has just dawned upon this country that competition is wasteful and ought to be restrained. People are beginning to realize that unnecessary trains have been operated, that freight has been carried by circuitous routes and in most extravagant ways without any real benefit to the public, and that for all this foolishness the public has been required to pay. It has become perfectly apparent both by reasoning and by actual demonstration that if the railroad facilities of this country could be used as a whole, if equipment and joint facilities could be employed to the best advantage, if all duplication of effort could be avoided, the same amount of transportation might be accomplished, the same service rendered to the public with a saving of millions of dollars annually. It is generally conceded, therefore, that when these roads go back the law ought in some way or other to permit of the restraint of competition.

While it has always been my own belief that competition between carriers might to some extent be eliminated with-

out injury to the public, it is apparent that this can not be made effective to a high degree unless we are prepared, not only to permit but to compel. This administration has provided in the city of Chicago an ideal joint ticket office. While our joint ticket offices are not in all cases perhaps satisfactory, that Chicago office is complete and meets the approval of every one. I recently asked the traffic representative of one of the large lines using that facility whether it would be continued if government control were to end. His reply was that the stronger lines would probably favor its continuance, but that the weaker lines would be likely to withdraw and establish offices for themselves and that this might lead to a disruption of the whole project. It has usually been the competition of the weak line which has disturbed the situation, and unless some way can be found to check that competition but little will be accomplished.

For my own part, I do not feel that it is at all certain that competition ought to be eliminated. The great objection in my mind to government ownership has always been that competition would be and must be thereby destroyed. I have doubted whether the same service could be rendered without competition which was rendered under the competitive spur. If the government can render a satisfactory service, then a great saving can be made by unified control and the only perfect unification is under the government itself. Can the government and will the government render a satisfactory service?

I have already said to you that up to the present time there has been no trial of government operation under peace conditions. Plainly stated, the first purpose of the Railroad Administration hitherto has been to win the war, not to serve the public. As a result the service has not been satisfactory. The principal complaint of the public is that its wants are not properly respected and its complaints not properly heeded by the railroads. The off-line solicitor has been called in and there is no one to give the information and render the service which he formerly supplied. It is difficult to obtain information of any sort either as to the location of your freight or the movement of trains. Even the abounding time table of the past has largely disappeared and the public is left without means of self-information. These and many other things have created the impression in the minds of the public that the operators of these railroads who ought to be the servants of the public are entirely disregarding of the wishes of the public.

I can not deny that these allegations are true to an extent, but I do most earnestly insist that the conclusion ought not to be drawn that a proper and satisfactory service can not be rendered by the government. That question can only be answered by an actual test. What the conditions of that test ought to be to make a satisfactory one will be considered later; what I desire to emphasize now is that this question, can the government render a service satisfactory to the public, can not be answered except by actual experience. The public should suspend its judgment until the result of an actual test under fair, normal working conditions is known.

Let it be distinctly understood, however, that I am not today advocating government ownership or government operation.

After being with this problem for 22 years, I feel that whether government ownership should be tried in this country of ours can only be determined by actual experiment. In the absence of that experiment, I would myself vote against it, but I do think that advantage should be taken of the present opportunity to make the test.

Today the United States government is in the operation of these railroads. Under the federal-control act two courses were open to the director general. He might leave

the operation of the properties largely in the hands of the owners under his control. That plan would not have involved in any proper sense government operation. The railroad official would have continued to direct the operations of his road, acting under the direction of the government and accounting to the government for the result.

Or the director general could affirmatively take over the operation of the properties and appoint his men, responsible to him alone and acting for him alone, to perform that operation. The latter course was adopted. It was, in my opinion, necessary to adopt it. So far as I can see, it would be impossible for the government to more completely take over the operation of these properties than it has done.

Many things necessary to a unified control have been accomplished, often at considerable expense. Joint ticket offices have been established. In some cases freight offices have been consolidated. Methods of unified operation have been put into effect. From my viewpoint most of those which must be done in order to give government operation a fair test have been done.

This being so, what additional is necessary to give government operation a working test?

First, and principally, it is necessary to know the period during which these properties are to be retained by the government. Today it is uncertain whether this period is to be 6 months or 21 months or 5 years, and this uncertainty permeates and paralyzes the whole railroad operating force from top to bottom. The first thing which should be done in any view of the situation is to definitely fix the term of government control.

Mr. McAdoo has stated that five years were needed for this purpose, and I understand that Mr. Hines will take the same position. I do not in anywise desire to set my own opinion up against theirs, but before Mr. McAdoo testified I had already expressed an opinion that three years would be about the proper time. The matter rested in my mind as follows:

It will take six months for the director general to formulate his plans and reorganize his forces. The point of view has entirely changed. In the past we have been operating these railroads to win the war, and public convenience has been largely sacrificed to that end. In the future they are to be operated to serve the public. This change in the point of view requires many operating changes. Trains must be restored, schedules must be revised, rules for the receipt, routing and transportation of freight and passengers must be recast.

One of the most important things, from my viewpoint, is the working out of some co-operative arrangement with the state commissions. Many of my railroad friends have insisted that the state commission should be eliminated, but this opinion I have never shared. Assuming that it would be possible to establish any system of operation or control which ignored the state commission, it would be, in my opinion, most unwise. The local commission has a kind of knowledge and experience which can not be supplied by any federal tribunal and which should be recognized and perpetuated in any solution of this railroad problem. It has been my belief, and still is, that it ought to be possible to work out under government control some plan of co-operation which should demonstrate the possibility of obtaining results from proper collaboration between the federal and the state authorities.

But all this takes time, and I have felt that it would be at least six months before the new director general could be fairly ready for action, before he could formulate his plans, organize his forces, and get his machine into working shape under peace conditions. The ensuing year should show whether the government can render a service with which the people of this country will be satisfied and at a

cost which they can afford to pay. This would bring us to July 1, 1920. By that time Congress would have accumulated and digested the necessary information from which to formulate legislation. If as seems probable today, government operation was not satisfactory, then a plan for private ownership could be worked out; but if by chance the experiment should disappoint the common expectation, government operation might be continued under some proper plan. It will require from a year to a year and a half to get these properties back into the hands of their owners and arrange for the termination of government control.

I also call your attention to the fact that by the first of July, 1920, the valuation work of the Interstate Commerce Commission will have gone far enough so that a definite idea of the general result can be had. No proper disposition of this railroad problem can be effected until we know what these properties are worth.

Orders of the Regional Directors

LOCAL EXCHANGE TRANSPORTATION.—In Order 109, Supplement 12, the Southwestern regional director has issued instructions concerning the issuing of local exchange passes between carriers, the same as those published in the *Railway Age* of January 3 (page 105).

Surgeons Appearing as Witnesses.—In Circular 174, cancelling Circular 131, the Southwestern regional director calls attention to the fact that surgeons for one railroad under federal control are appearing in court as witnesses against other railroads under federal control. Such action is inconsistent. There is no objection, however, in cases where the surgeon has actually attended the injured person and who testifies from his knowledge of facts acquired in his professional capacity. The intention of the order is to forbid a railroad surgeon from appearing as an expert witness in proceedings against another carrier under federal control.

Rejected Scrap Iron Shipments.—In order 164 the Southwestern regional director issues instructions to watch closely and report promptly any cases where shipments of scrap iron are rejected by consignees or where cars containing scrap iron are not promptly unloaded because of the present unsettled market conditions. This will guard against serious delay to cars.

Fire Loss, Capital Expenditures.—In Order 175 (exception to director general's Circular 67) the Southwestern regional director advises federal managers that in cases of fire damage, where a charge to capital account for rebuilding is less than \$1,000, the work may be done without obtaining authority from his office or from the director of the Division of Capital Expenditures.

Mechanical Department Circulars of Instructions.—In Order 166 the Southwestern regional director orders the issuance of all circulars to date pertaining to repairs to freight cars. The circulars so far issued which refer particularly to freight equipment are Nos. 1, 4, 7 and 8 of the mechanical department and 7 and 20 (revised) of the Division of Operation. In cases where roads reissue such circulars they must be issued in their entirety, no portions being left out.

Mileage on Pullman Cars Moved Deadhead.—In Circular 176 of the Southwestern regional director, Public Service and Accounting Circular 58, abstract of which was published in the *Railway Age* of January 17 (page 223), is augmented by quoted instructions from C. A. Prouty, Director of Accounting, which states that mileage charge should be made against the Pullman Car Lines for Pullman cars moved deadhead on the request of the Pullman Company, where no return haul was due or intended. This particular feature was not covered by P. S. & A. Circular 58.

Return of Cars to Non-Federal and Canadian Roads.—

In Freight Car Distribution Notice 3 the Northwestern regional director directs the return to Canadian roads and roads not under federal control of all freight cars on federal roads on which per diem payments are being made. The home movement of these per diem cars should be under load, if possible, or empty where the movement can be made in the direction of light tonnage and without serious empty mileage.

Senders' Symbols for Telegrams.—In Supplement 1 to Circular 71, the Northwestern regional director states that for the purpose of securing brevity, all telegrams from regularly established offices (not applying in cases of trainmen, officers or agents when traveling, etc.), must bear symbol numbers as prescribed below:

1. Where but one person files telegrams over one signature, messages shall be numbered consecutively commencing with No. 1 (number to be written at end of telegram), on the first day of each calendar month, the number to be prefixed by the letter A.

2. Where more than one person files telegrams over the same signature and separate files are kept, such person will number his telegrams consecutively, commencing with No. 1 (the number to be written at end of telegram), on the first day of each calendar month, prefixing the number by a letter to be assigned him.

In answering a telegram the number of the message being answered shall be quoted at the beginning of the body of the message and no further reference made, the symbol identifying the date and subject matter. The letters E, L, P and T should not be used as prefixes; and I, H, V and X may be used only to avoid duplication.

Posting Notices in Stations.—Supplement 2 to Circular 112 of the Southwestern regional director describes signs advertising the United States employment service (Department of Labor) which are approved for display in station waiting rooms.

Intensive Loading of Fertilizers.—In Supplement 1 to Circular 67 the Northwestern regional director announces that all shippers of fertilizer who are members of the Chemical Alliance, Inc., and all shippers of agricultural lime who are members of the National Lime Association will furnish the railroad agent an extra copy of the bill of lading for each carload of these commodities sent on the seventh, fourteenth, twenty-first and last days of each month. This copy, which is to be forwarded by the local freight agent to the Car Service Section, at Washington, will be used in compiling data for comparative purposes. Statements are to be furnished to each shipper showing the average loading of these commodities, the object being to educate local dealers and farmers to order in maximum carload lots or, when necessary, to club together for this purpose.

Appeals Concerning Out-of-date Wage Questions.—A. H. Smith, regional director, Eastern Region, by a circular of February 21, number 1200-4-90A535, cautions federal managers against too ready acquiescence in appeals to the boards of adjustment concerning questions of pay which were not properly pending under the terms of the agreements between the roads and employees. It appears that many very old cases have been appealed to the various boards—cases which had been officially dead for a long period before the government took control of the railroads.

General Foremen's Association.—The Northwestern regional director, file 61-1-20, advises that employees who are members of this association be allowed to attend the annual convention, which will be held in the fall of 1919, where they can do so without detriment to the service; transportation should be furnished and necessary expenses allowed.

Grain Embargo—Primary Market.—In Supplement 19 to Circular 34 the Northwestern regional director announces that permits are no longer required for shipments of corn and oats to Milwaukee, Wis., when billed from country stations.

Government Standards for Freight Car Repairs

Railroad Administration Requirements Ambiguous— Will Be Costly If Rigidly Enforced

By A Mechanical Engineer

A CLOSE STUDY of the effort to establish "Material Standards for Freight Car Repairs," as outlined in U. S. R. A. Mechanical Department Circular No. 8 cannot but serve to convince the unprejudiced reader that it contains many ambiguities which are difficult of interpretation, that in many cases its observance is impracticable, and in other cases if followed would accomplish the introduction of the specified standards only at an expense totally unwarranted by the actual benefits realized. The introductory clause of this circular reads: "When renewing parts or applying betterments to freight cars owned by railroads under federal control, if suitable material, either new or second-hand, that is standard to the car, is in stock, it shall be used. Where such material is not in stock, material standard to United States standard cars should be used, if available."

Interpreting the above clause in strict accordance with its reading, it would appear that should parts "standard to the car" not be in stock they may not be manufactured or purchased even if readily available by manufacture or purchase, and regardless of all considerations of economy of repairs "material standard to the United States standard cars should be used, if available." Just what does "if available" mean, and to permit the observance of the most elementary principles of economy should not the conclusion of these general instructions have read, "*if readily applicable to the cars to be repaired?*"

Some of the rules set forth appear to be particularly impracticable of application and unwarranted.

Rule No. 3 reads: "Side bearings—If body or truck side bearings require changing or renewing, frictionless type should be used, interchangeable in capacity and dimensions with those used on United States standard cars."

The committee appointed to consider the general subject of freight car repairs doubtless acted in accordance with its best judgment in deciding to extend the use of a device standardized for new cars by adopting it for repairs to cars in service. Nevertheless, it would seem that frictionless side bearings had not received a sufficiently strong majority endorsement by railroad mechanical department heads to warrant anything more than their recommended use in freight car repairs where conditions permit application without radical change in body or truck bolsters. Any one with a knowledge of the varying side bearing conditions obtaining on the multiplicity of freight car designs in service today can appreciate the problem involved in replacing the ordinary rub side bearings with the frictionless type interchangeable in dimensions with those used on United States standard cars. In many cases such replacement could not be effected for lack of space between the bolsters at the point of attachment of the side bearings; in other cases because of the rub side bearings being cast integral with the bolsters.

As to the stipulated "interchangeability in capacity" with frictionless side bearings used on United States standard cars, an investigation will show that frictionless side bearings have not been and are not rated in accordance with capacity, the efforts of each individual designer being all in the direction of the development of devices whose several parts would continue to function properly and which could

be maintained in working condition at minimum cost under the maximum side bearing loads obtaining under modern freight cars.

Rule No. 4 reads: "Side truck frames—When necessary to renew side truck frames, cast steel U-shaped section, United States standard car type, with separable journal boxes, to be used."

The superiority of the cast steel side truck frame to the built-up arch bar type in rigidity, ultimate strength and durability no doubt justified its selection for the United States standard cars, but from the standpoint of supply available for quick repairs there are many who will question the propriety of designating the U-shaped section to the exclusion of the several T-shaped section designs that have given satisfactory service.

With respect to the specified exclusive use of the cast steel truck side frame for renewal of side frames in service: The intent and purpose of rule 4 evidently is the gradual elimination of all arch bar side frames and their replacement by the cast steel U-shaped section United States standard car type. A rigid adherence to this rule would obligate all railroads to immediately secure and carry a stock of the standard cast steel frame. Further, the wording of this rule is so indefinite that it seems necessary that supplementary instructions be issued stating the extent of failure which would constitute sufficient cause for renewal; that is, what proportion of the several members of the arch bar side frame should fail to warrant complete replacement with the cast steel side frame in preference to making easy and quick repairs by renewal of one or more of the individual parts.

The very extensively used M. C. B. arch bar side frame, being a built-up structure composed of solid rectangular bars, columns and column bolts, is very seldom subject to failure in its entirety, and as all of its component parts have been M. C. B. standards for many years and as such are carried in stock by all railroads, this type of side frame lends itself to quick and economical repairs.

The quite extensive adoption and use in recent years of cast steel side frames of the pedestal type, requiring a design of journal box differing from the strictly M. C. B. standard type, presents an obstacle to the use of the standard side frame required by rule No. 4 in making renewals that could be overcome only by entire disregard of all consideration of economical repairs. It can be readily seen that in replacing a failed side frame of this pedestal type with the United States standard car type it would necessitate scrapping the journal boxes or assigning them to storeroom stock for a possible future need which might never develop.

If the foregoing criticism is pertinent it would seem that rule No. 4 requires the issuance of supplementary instructions or the exercise of considerable judgment in its observance to avoid unwarranted expense and unnecessary delays in making repairs.

Rule No. 6 reads: "Draft gears—(a) Friction draft gears, either Cardwell, Miner, Murray, Sessions Type "K," Westinghouse, or similar gears, to be of not less than 150,000 pounds capacity with a maximum travel of $2\frac{3}{4}$ in.

"(b) Spring draft gears, if used, to be at least equal in capacity to two M. C. B. Class "G" springs, interchangeable with friction gear without change in car construction.

"(c) Clearance between coupler horn and striking casting to be 3 in.

"(d) Coupler to be key connected to draft gear."

Clause (b) of rule 6 seemingly permits the use of spring draft gears of a minimum capacity of 60,000 lb., but the qualifying stipulation reading "interchangeable with friction gear without change in car construction" effectually nullifies this seeming concession, as the most casual investigation will show that no known modern arrangement of draft castings suitable for tandem or twin M. C. B. class "G" springs can be designed so as to likewise provide the length and width of the standard pocket required for friction draft gears.

This qualification being present in rule No. 6, the use of friction draft gears becomes obligatory on steel reinforcements (either draft arms or through center construction) applied to wood underframe cars, or in the replacement of spring draft gears on steel cars where suitable draft attachments standard to the car are not in stock.

The difficulties and expense incident to replacing spring draft gears, either tandem or twin, on the many steel cars so equipped, by friction draft gears are too obvious to dwell upon, and if investigated would convince operating officials of the entire impracticability of this clause of rule No. 6 and the enormous expense which would eventually result in its observance.

Metallic draft arms in the past ten years have been found a very satisfactory, adequate and economical means of reinforcing wood underframe cars, but under rule No. 6 such draft arms must now be used in conjunction with friction draft gears. This brings about the concentration of the entire buffing shock on the center line of draft, with a resultant moment of force about the neutral axis of the section of draft arms above the bolster (which is limited by the design of the car) of such magnitude that stresses will be set up in the metal that are in excess of its elastic limit. This condition does not obtain with a 60,000-lb. capacity spring draft gear and a 2-in. coupler horn clearance, because the buffing shock delivered on the center line of draft is limited to the spring capacity, after which, with the coupler horn in contact with the striking plate the eccentricity of shock is very materially reduced. In other words, in using spring draft gears with metallic draft arms and two-inch coupler horn clearance it is possible to keep within the M. C. B. maximum ratio of unit stress to end load of .15, while in many cases it is not possible to meet this requirement with friction draft gears. Are we to eliminate an altogether satisfactory and economical method of reinforcing wood underframe cars which, when used in conjunction with spring draft gears can be designed to meet a very essential M. C. B. requirement, but which in many cases cannot be so designed when combined with a friction draft gear in an underhung draft rigging.

The foregoing is predicated in the case of spring draft gears on a clearance of two inches between the coupler horn and striking casting. Clause (c) specifies a three-inch coupler horn clearance, but when and how this is to be obtained is left to the ingenuity of the railroad making repairs. On many existing designs of underframes its reduction to practice would result in overstressing the center or draft sills between end sill and bolster.

The statement is ventured that in the opinion of many mechanical department heads spring draft gears are entirely satisfactory on any design of adequate steel reinforcement for wood underframe cars and that the greatly increased cost of applying friction draft gears to equipment of limited life and value is not justified.

Rule No. 8 reads: "Doors—Side doors on box or stock cars (except double deck stock cars) will be bottom supported, and the attachments uniform with those on United States standard cars."

While there may be but few railroad men who will question the superiority of the bottom hung side door to the top hung door, it is difficult to understand the viewpoint of the committee on car repairs in making the bottom hung door an absolute requirement for repairs. In many cases this would necessitate extensive alterations at the side plate and side sill, and possibly involve rebuilding the doors themselves at a cost many times greater than that involved in merely replacing all the original door fixtures. In fact, the design of bottom support attachments for many existing designs of freight cars which would at the same time be "uniform with those on United States standard cars" is a problem which will be found impossible of solution. It would seem imperative to waive this rule for cars with side sill construction which does not readily lend itself to the application of the bottom track with its supporting brackets.

Rule No. 9 reads: "Ends—Box cars with weak constructed ends requiring two-thirds of end to be renewed should be reconstructed as follows:

"(a) Horizontal corrugated steel ends (two or three-piece) having top section three-sixteenth inch thick, and bottom section or sections one-fourth inch thick and corrugations $2\frac{1}{4}$ in. deep.

"(b) Vertical reinforced ends with 4 or 5 in. 'Z' bars securely fastened to place on end sills and end plates. End plates to be diagonally braced on inside of car, under roof, to side plates, or with reinforcements equivalent in strength."

While a certain latitude is permitted in renewing weak constructed ends because of the two different methods stipulated, an analysis of clause (a) of this rule discloses the fact that it becomes necessary to use one proprietary structure, notwithstanding the fact that the U. S. R. A. specifications for new cars permit the alternate use of three different types of steel ends. To those railroads to whose cars another design of steel end might be more economically applied the injustice of this very narrow restriction is most apparent.

Rule No. 12 reads: "Roofs—When roofs are changed or renewed, outside flexible type metal roof made of 22 or 24 gage galvanized iron with mullions between roof sheets and with flexibility at eaves and ridges, will be applied. Roofs should be interchangeable with United States standard cars having same length and width sheets. To permit the use of standard sheets, the following changes may be made:

"(a) Increase or decrease in thickness, or omitting eave molding, fascia, or both.

"(b) Increase the width of roof flashing at eaves.

"(c) Where cars are equipped with all metal roofs, such construction may be continued when renewals are necessary, if considered desirable to do so."

The effect of this rule on freight car repairs and its practical application is largely a question of interpretation. Taken by itself its observance is required only "when roofs are changed or renewed," but when linked up, with the introductory clause of the circular, which requires that when material standard to a car is not in stock material standard to United States standard cars should be used, it apparently becomes necessary to remove without regard to expense a partly worn-out roof (all wood or inside metal) and apply one particular design of patented outside flexible type metal roof.

There are many who endorse the benefits and economy to be derived from standardized freight cars and locomotives building and hereafter built, while there are also many who oppose such rigid standardization as has been adopted for United States standard cars, but those who advocate standardized new equipment could not pursue a plan better calculated to discredit their views than by acquiescence in the enforcement of Mechanical Department Circular No. 8. If held to be mandatory and put into execution, it would add such a burden of increased cost of freight car maintenance as to rival the increase in direct labor operating costs already

imposed by government control. It is an abortive attempt to extend standards never originally contemplated for anything but new cars of one general predetermined design to some two million (2,000,000) cars of a multiplicity of designs now in service without regard to the enormous cost involved, and it would seem that the Railroad Administra-

tion in approving it had acted with a very indefinite knowledge of what its actual reduction to practice would mean. The statement is ventured that thus far it has but served to confuse and delay the normal schedules of individual railroads for freight car reinforcements and maintenance.

The Central Western, the Largest Railroad Region*

Comprising Two-Fifths of Country's Area, It Includes but One-Fifth of Operated Mileage

THE CENTRAL WESTERN REGION is by far the largest of the seven railroad districts in the United States, comprising approximately 40 per cent of the area of the country. It is more than twice as large as the Northwestern region, the second district in point of size, but despite that fact it contains about the same operated mileage. With two-fifths of the area of the country and about one-fifth of the total operated mileage, the Central Western lines own about one-sixth of the equipment in the United States and produce slightly more than one-quarter of the net revenues from railway operation.

Roughly speaking, the Central Western region includes the states of Nebraska, New Mexico, Colorado, Nevada, Arizona, Utah, Wyoming, California, one-third of Oregon, two-thirds of Idaho, one-sixth of Montana, one-half of South Dakota, two-fifths of Iowa, one-half of Missouri, most of Illinois and Kansas and small portions of Indiana, Oklahoma and Texas, or approximately 1,220,000 square miles. The operated mileage under government control in this territory is about 53,000 miles, or about 21 per cent of the total mileage in the United States. With a relatively large area in comparison with its mileage, the region is not so generously supplied with railways as other sections of the United States. The territory contains even a smaller share of the equipment of the country, for the Central Western lines own about 360,000 freight cars, 11,000 locomotives and 9,100 cars in passenger service, or between 16 and 17 per cent of the total equipment of those respective classes in the United States.

Like the roads in the Northwestern region, the Central Western lines compare more favorably with the roads in the more thickly populated sections of the United States from the standpoint of operating income. According to statistics compiled by the Interstate Commerce Commission for the fiscal year 1916, the operating revenues of these lines amounted to about \$639,000,000, or between 21 and 22 per cent of those of all roads; operating expenses were \$401,000,000, or about 19 per cent of those of all American lines, while net revenues from railway operation were \$238,000,000, or from 27 to 28 per cent of those of all lines. Similar percentages for the same period show that the Northwestern region produced 18 per cent of the operating revenues, incurred 15 per cent of the operating expenses and made net revenues from railway operation equal to 24 per cent of those of all railroads.

A Region of Strong and Weak Lines

The Central Western region contains both strong and weak lines. The Atchison, Topeka & Santa Fe, developed under the able leadership of E. P. Ripley; the Southern Pacific, Union Pacific, Los Angeles & Salt Lake and Oregon Short

Line, built up under the guidance of E. H. Harriman; and the Chicago, Burlington & Quincy, reorganized and strengthened under the supervision of James J. Hill, are among the best managed railway systems in this country, not to exclude the world. The Illinois Central, although only a portion of it is included in the region, is also a well-managed line. Some of the other important roads, however, have suffered severely from unwise financial manipulation.

Fourteen Roads Over 1000 Miles Long

Fourteen railroads in the Central Western region operate more than 1,000 miles each, and together constitute 91 per cent of the entire mileage of the territory. Four of these railroads penetrate other regions; about 32 per cent of the Chicago, Rock Island & Pacific, 35 per cent of the Illinois Central, 18 per cent of the Southern Pacific and 45 per cent of the Wabash are outside the Central Western district. Taking into account only the mileage within the region, the 14 large lines rank as follows with respect to length: Atchison, Topeka & Santa Fe (including the Panhandle & Santa Fe), Chicago, Burlington & Quincy, Southern Pacific, Chicago, Rock Island & Pacific, Union Pacific, Illinois Central, Denver & Rio Grande, Oregon Short Line, Wabash, Los Angeles & Salt Lake, Chicago & Eastern Illinois, Colorado & Southern, Chicago & Alton and the El Paso & Southwestern.

The Trend and Character of Traffic

The dominant direction of the Central Western lines is east and west. The Santa Fe and the Harriman lines connect the Mississippi valley with the Pacific coast, and, under old competitive conditions, the Burlington in conjunction with the Northern Pacific and the Great Northern constituted another avenue of transportation from the Central West to the Pacific; likewise the Chicago, Rock Island & Pacific had traffic agreements with the El Paso & Southwestern and the Southern Pacific which gave it a share of trans-continental passenger and freight business, while other traffic moved through Denver and over the Denver & Rio Grande and Western Pacific. The westbound freight movement consists mainly of manufactured products and merchandise required by the farms and mines and the trans-Pacific trade. Considerable coal is also shipped to western points.

As in the Northwestern region, the heaviest traffic in the Central Western territory is in products of mines. In the fiscal year ending July 30, 1916, the 14 large lines in the region moved over 92,000,000 tons of this class of freight, or 45 per cent of their total tonnage. By way of comparison, mine products constituted 37 per cent of the tonnage of the nine largest Northwestern lines constituting 88 per cent of the operated mileage of that region. While ore alone made up 17 per cent of the business on those Northwestern roads in 1916, it accounted for but 8 per cent of the total business of the Central Western carriers for the same year. Despite

*This is the fourth of a series of articles describing the characteristics of the seven railway operating districts. The article on the Southwestern region appeared in the *Railway Age* of August 9, 1918, page 235; that on the Allegheny region, August 23, 1918, page 331; and the discussion of the Northwestern region, September 13, 1918, page 483.

this difference the Central Western territory is a prolific producer of ores and particularly of those bearing the more precious metals, which do not move in large quantities. Whereas very little coal is mined in the Northwestern region, Illinois and that strip of Indiana included in the Central Western region contain very rich bituminous coal fields. It is not surprising, therefore, that soft coal constitutes one-fourth of the tonnage moved in the territory.

Agriculture is second to mines as a source of tonnage in the Central Western region. In the fiscal year 1916 the 14 largest lines hauled nearly 40,000,000 tons of agricultural products, or 19 per cent of the entire tonnage handled during the year. Containing a large portion of the Mississippi val-

lines and the Santa Fe for the California perishable traffic. The Santa Fe Refrigerator Despatch, affiliated with the latter system, and the Pacific Fruit Express, which served the Harriman lines, provided the latest and most improved types of refrigerator equipment for this business and maintained prompt and expeditious service between points of origin and Eastern markets.

Manufactures are third in importance as a source of traffic, over 32,000,000 tons having been moved in 1916, or about 15.5 per cent of the total traffic handled. In the same period the nine large lines in the Northwestern region moved a tonnage in manufactured products equivalent to 13 per cent of all the freight handled by them. Forest products rank fourth



B. B. Greer
Assistant Regional Director



Hale Holden
Regional Director



H. A. Scandrett
Traffic Assistant



H. R. Safford
Engineering Assistant



F. E. Clarity
Transportation Assistant



L. N. Hopkins
Chairman Regional Purchasing
Committee



William Sproule
District Director

ley, the largest fertile region on the globe, the Central Western territory includes lines originally built to serve the farms which are still called "granger" roads. The Burlington is the heaviest carrier of farm products, with a tonnage of 7,650,000 in 1916, and the Santa Fe, the Union Pacific and the Southern Pacific are next in importance. The Central Western lines enjoy a large fruit and vegetable traffic. In 1916 the 14 important roads moved approximately 10,500,000 tons of this class of freight; this was five per cent of their total tonnage. The Southern Pacific, the Santa Fe, the Union Pacific, the Rock Island and the Illinois Central are important fruit and vegetable carriers. Under competitive conditions there was a keen rivalry between the Harriman

as creators of tonnage in the Central Western region; in 1916, 17,400,000 tons of this class of freight were moved on the 14 important lines in the district, or about 8.5 per cent of the total business handled by them. It will be noted that forest products hold a relatively less important position from the standpoint of tonnage in the Central Western than in the Northwestern region, where the nine largest lines handled a tonnage in this business equivalent to 16 per cent of their entire traffic.

Although products of animals rank fifth as producers of tonnage, accounting for about 10,500,000 tons in 1916, or five per cent of the business handled by the 14 large lines, the Central Western region is undoubtedly the most impor-

tant live stock territory in the country. The great packing industries at Chicago, Kansas City and other points in the Middle West receive the major portion of their cattle, sheep and hogs from the Central Western lines.

Oil is rapidly assuming greater importance as a source of traffic in the region. The Oklahoma-Kansas and the California oil fields now produce more petroleum than any other districts in the United States. These two sections are relatively new as oil producers, and will undoubtedly show a steady increase in output for some time to come.

Traffic Density of Region Low

Like the Northwestern, the Central Western region is one of great distances and of long hauls. The average haul of revenue freight on the Union Pacific in 1916 was 412 miles; that of the Santa Fe (exclusive of the Panhandle & Santa Fe) was 293 miles, while that of the Burlington was 275 miles. The traffic density is low compared with that of eastern roads. The ton mileage of revenue freight per mile of road averages about one-fifth of that on roads in the Allegheny region.

Under competitive conditions there was keen rivalry for traffic in the region. As previously pointed out, trans-continental business was shared between the Santa Fe, the Harriman lines, the Hill lines, the Gould lines and the Rock Island and El Paso & Southwestern in conjunction with the Southern Pacific. In the passenger field competition resulted in the operation of exceptionally well-equipped trains. Naturally some duplication of train service obtained because of the sharp struggle for business, and this was one of the first conditions to attract the attention of the Railroad Administration during the war when the conservation of power and equipment was highly important. Accordingly, quite a number of trains were removed from service and likewise competitive advertising for passenger business was prohibited. The Central Western region, however, is an exceptionally fertile field for the development of passenger traffic. Containing both winter and summer resorts and some of the most important national parks and monuments, it is in a position to maintain a high class passenger service the year round.

A Region of Promising Possibilities

Like the Southwestern and Northwestern regions, the Central Western territory is rich in possibilities for further development. Undoubtedly new oil wells and mines will be opened and new farms and industries created more extensively as time goes on. This will mean additional mileage for the Central Western roads and consequently additional traffic.

The Central Western region has no serious terminal problems such as exist in the East. Although lines of the territory operate into the Chicago and St. Louis switching districts, those terminals are under the jurisdiction of the Northwestern and Southwestern regional directors respectively. The only terminal of consequence is the Kansas City district, which is under the immediate authority of W. M. Corbett, terminal manager, who was formerly president of the Kansas City Terminal. In the past, when congestion has appeared on lines in the Central Western territory it has generally constituted a reflection of operating difficulties in Chicago, St. Louis or other gateways to the East.

The region has one subsidiary district roughly constituting the area west of the Rocky mountains. William Sproule, who is district director in charge of this section with headquarters at San Francisco, Cal., has jurisdiction over all lines west of Ogden, Utah, and Salt Lake, Albuquerque, N. M., and El Paso, Tex., and south of Ashland, Ore. Mr. Sproule was formerly president of the Southern Pacific, and is therefore thoroughly familiar with the district over which he has supervision.

The Regional Director

Hale Holden, regional director of the Central Western lines, is like the director general, a lawyer by training. He was born at Kansas City, Mo., on August 11, 1869, and was educated at Williams College and the Harvard Law School. After practicing law at Kansas City he entered railway service on July 1, 1907, as general attorney for the Chicago, Burlington & Quincy. From January 1, 1910, to November, 1912, he was assistant to the president. In the ensuing two years he was vice-president, and on August 27, 1914, was elected president. Mr. Holden has the distinction of being a former protege of James J. Hill and, although an attorney, acquired a broad conception of the best operating principles through his close association with the "empire builder." During the early days of the war Mr. Holden was a member of the Central Department District Committee of the Railroads' War Board, and when the carriers were taken over by the government in December, 1917, he was appointed a member of the temporary advisory committee of the director general. In June, 1918, when the Western railroad region was divided into three parts, Mr. Holden was appointed regional director of the central portion which was designated the Central Western region. When he assumed these duties he resigned his position as president of the Chicago, Burlington & Quincy, the Colorado & Southern, the Ft. Worth & Denver City and the Wichita Valley.

New York Report on

South Byron Collision

THE NEW YORK STATE Public Service Commission, second district, has issued a report, signed by C. R. Vanneman, chief of the division of steam railroads, on the circumstances and causes of the rear collision of passenger trains on the New York Central at South Byron, N. Y., at 3:42 o'clock on the morning of January 12, when westbound passenger train No. 11 ran into the rear of westbound passenger No. 17, second section, killing 22 passengers and injuring as many more.

The present report gives the facts substantially as they were shown in the *Railway Age* of January 17, page 212, except that the testimony of the flagman concerning his action is quite different as regards distances; and there are some additional details.

The stopping of the train at this place to have a helping engine attached is not usual; it was necessary in this case because the engine was not steaming well. The ascent westward to Batavia, 7 miles, is at about 44 ft. per mile. The helper was just backing toward the train at the moment the train was struck by No. 11, and thus there was a double collision; and this, says the report, no doubt accounts for the completeness of the destruction of the steel sleeping car at the rear of the standing train. The train was pushed forward about 250 ft.; and when it had thus moved about ten feet it met the pushing engine, moving backward. No. 11 had been running at about 60 miles an hour and its speed was not appreciably slackened; the inspector believes the engineman did not apply brakes until within about 700 ft. of the standing train. He believes that the engineman "for a temporary period was not in possession of his full senses," although both engineman and fireman claimed at the hearing, that the runner was wide awake.

The engineman of No. 11, John Friedley, is 61 years old, and has been running a locomotive since 1885, all of the time in passenger service. In his testimony he said that he never had slept while on a locomotive. The flagman of the standing train, Thomas Groves, has served in that capacity on the New York Central 28 years. His first statement was that

he had gone back about 2,200 ft., and had used torpedoes and a fusee; but he afterward changed his story, and the inspector believes that he had got back not more than 700 ft.; had not used either torpedoes or fusees; but had lighted a fusee after No. 11 had passed him.

Friedley had been out of bed about 17 hours 42 minutes. His fireman, David Brill, had fired on passenger trains only two trips before this one. He claimed that the signals were clear (as the engineman had said) and that he called them properly to the engineman. The line of the road is straight for three miles, and, from tests made after the collision, the inspector believes that anyone looking forward from the locomotive must have seen the block signal lights and the tail lights on the standing train. The engineman claimed to have had his attention attracted by a lantern or lanterns on or near the ground; but he could not have seen these without also seeing the tail lights. The weather was clear. The temperature was about five degrees below zero.

In his conclusions as to the cause of the collision the inspector discusses rule 99, the flagging rule, which was modified in October last when a new code of rules was issued. Formerly, on the passenger tracks, a flagman going back to protect his train was required to remain out until a following train arrived, but this has been abrogated, and whistle signals are now provided for calling in the flagman. After considerable discussion of the reasons for and against this change the inspector concludes that it is not open to criticism. No other railroad, so far as he knows, has a rule under which a flagman must not return to his train.

Another change in the rules discontinues the practice of carrying a red tail light on the platform of the car at the rear of a passenger train, and in the top of the caboose on a freight train. The inspector believes that these lights should have been retained; but that this question has no real bearing on the collision under consideration.

Automatic Train Stops

Under the head of "The Remedy" the report discusses automatic train stops. Frank J. Sprague, an eminent electrical engineer, who has devised an automatic train stop, was called by the representative of the Interstate Commerce Commission, and testified at the hearing on this collision; he said that he had tried to secure the adoption and test of his apparatus on the New York Central. About two years ago plans apparently had been nearly perfected for installing the apparatus, between Poughkeepsie, N. Y., and Peekskill, but the railroad company deferred taking final action, and when this country entered the World War, everything was dropped. Mr. Sprague has reported these facts to the director general of railroads at Washington.

Continuing, the report says:

"The fundamental principle on which an automatic device of this character must be evolved is that it should act when and only when the engineman fails to properly control his train. In other words, the control of the train should remain with the engineman at all times, until he fails to do that thing which in the regular operation of his locomotive he would normally do. If on approaching a section of track which is occupied by another train or which is in some other way obstructed, the engineman reduces his speed to such an extent that he will stop short of the obstruction, then complete control of the train should be left in his hands, with a further provision that this control shall be removed at the instant when it becomes unsafe for him to longer retain it.

"Obviously, the obstacles in the way of such an accomplishment are numerous. To eliminate them requires the employment of intricate and somewhat delicate instruments, among which must be the track relay, a highly developed and wonderfully efficient instrument now used in the operation of automatic signal systems. These instruments have

been known to permit clear failures of signals chiefly because they were improperly set up or have been removed from their proper normal positions. Such an accident might occur in the case of the automatic stop, and then we should have a stop inoperative at the crucial time. Of course, such occurrences are remote, clear failures of signals resulting from all causes occurring about once in every 1,000,000 movements of a signal. * * *

"Since all automatic stop or train control devices developed up to this time require the use of certain apparatus on the locomotive or train, it becomes immediately obvious that an additional factor of maintenance over that necessary for the signal is introduced. This is the roundhouse maintenance; and in considering it, it seems well to point out that the introduction of an automatic device on any part of a railroad system means that maintenance of the motive power apparatus must be provided for at all engine terminals at which locomotives are housed which may operate on the part of the railroad so equipped. It can readily be seen what this means for a railroad of the character of the New York Central. Reduced to the minimum, there are but two alternatives; viz., either the whole railroad must be provided with the device, or unequipped locomotives from branch lines must not be permitted on that portion of the railroad on which the device may be installed.

"At best the stop must be an adjunct of the signal system, unless the design replaces the signal system entirely. It seems to be entirely obvious that the roadside portion of the stop may be developed in the laboratory from an initial point of perfection equal to that of the present signal systems, but there are no criterions by which the locomotive apparatus may be measured. Hence the questionable propriety of development under service. I believe that this difficulty can be surmounted if it is concluded that this is the course which should be pursued; but I am not yet fully convinced that there is the necessity for an automatic stop for a train control device. I dislike very much to see the installation of anything which in the least interferes with the supreme authority of the engineman, or which directly or indirectly may be the cause of any relaxation of his normal vigilance.

"In view of the catastrophe under consideration this state of mind leads to inquiries as to what may be done without providing such a device. I know of but one thing. It is certain that something must be provided which will restore the engineman to the proper mental condition if he be other than dead, and in the latter case, the fireman must be impressed into service. To accomplish this there seems to be but one means available; viz., by conveying audibly to the engineman or fireman a notice of the fact that he has failed to do that which is required of him. The most effective audible signal so far devised which does not introduce complicated mechanisms on the locomotive in addition to the already complicated but highly developed roadside signals is the explosion of a torpedo. Such devices in a crude state have been used in England and on the continent, with considerable success, as I am informed. In England, the laborious method of requiring track men to place torpedoes on the rails at signals to warn the engineman of his location in foggy weather has been employed with marked success. On one of the French railroads, it is stated that there have been no accidents resulting from the failure of enginemen to observe signals for many years, during which time the torpedo has been in service. Devices have been under development in the United States for some time but I am not aware that any have been perfected sufficiently to warrant their installation. I believe they can be developed and further that they can be installed at much less expense than a stop device. I am also of the opinion that since such a device need not involve a further distribution of responsibility, beyond the relatively small amount of additional mainte-

ance which would fall upon the signal maintainer, the efforts of those charged with securing greater safety of operation on the railroads should be directed to its development.

"It is entirely obvious that it has been necessary, especially within the last few years, for executives to give the utmost consideration to every item of expense, and those items in the annual budget covering the future existence of the property as well as the necessities with which to render service to the public have rightly been given first consideration. The dwindling difference between income and expense has left little for the consideration of such items of additions or betterments as the automatic stop, especially when installations estimated to cost upwards of \$14,000 per mile have been urged. Of course systems designed to cost much less have been patented and partially developed, but the efficiency of these less expensive devices has been seriously

open to question. It seems doubtful therefore, if censure may rest on the executives for not having proceeded with extensive trials, irrespective of the expense involved.

"I do not believe that the problem of perfecting an automatic train control device is impossible, assuming that such a device is essential to the safe operation of the railroads. * * * It is fortunate that the Railroad Administration has appointed a strong committee to consider the matter, and it is to be hoped that the many recent developments of the electrical art have produced features which will soon place the automatic train control in the realm of an unquestioned possibility, provided of course it is concluded that such a device is absolutely essential. The committee should include within its investigations the subject of audible signaling, a relatively unexplored field but one in which I believe the real solution lies."

Second Track Construction on the Hocking Valley

Improvements Undertaken Where Work Was Lightest
Constitute Typical Example of a War Project

THE SECOND TRACK now being built by the Hocking Valley between Columbus, Ohio, and Toledo, clearly falls in the class of war work, not only from the standpoint of the results obtained for the amount of work done but from the nature of the auxiliary facilities that are being provided simultaneously at various points along the line. The work has also been conducted in a way that was designed to make the results

available as rapidly as possible, but an unavoidable circumstance, also a result of the war, interfered seriously with the program as planned.

There are few localities in the country where an equivalent amount of double-track line with a 0.2-per cent grade opposing the traffic could be obtained at a smaller cost. By selecting those portions of the line where conditions were most favorable, it was possible to plan 39½ miles of second track involving a total of only 478,000 cu. yd. of grading or about 12,000 cu. yd. per mile, while the bridge work involved is almost negligible. A further evidence of the favorable character of the original location is indicated by the fact that the 0.2-per cent grade was obtained without any change in alignment and only one change in grade.

In accordance with the urgent needs of the times, this work was completed in sections so that portions of the new track could be placed in service as rapidly as possible and thereby relieve the single track. That this pro-

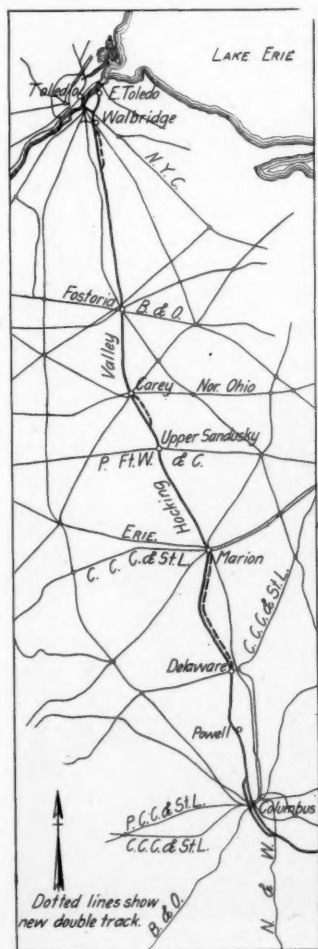
gram could not be carried out in full resulted from an inability to obtain rail in adequate quantities. Therefore, although nearly all of the grading is completed, only about 15 miles of track has been laid and placed in service to date.

Simultaneous with the construction of the second track, terminal improvements have been carried on at several points on the line which are designed to increase the capacity without the necessity for radical changes. The most important ones include the addition of several tracks to the yards and additions of 12 stalls to roundhouses at Parsons Ave. (Columbus) where traffic is exchanged with the Chesapeake & Ohio Northern and at Walbridge where the road trains from the south are classified and coal cars are turned over to transfer crews for delivery to the Hocking Valley coal dock at East Toledo.

The business of the Hocking Valley is primarily coal from mines on its own lines in the Hocking valley in southeastern Ohio, and from West Virginia mines tributary to the Chesapeake & Ohio. Coal from the latter is delivered by the Chesapeake & Ohio Northern at Columbus. In 1918 the coal hauled from Columbus to the lake aggregated 5,300,000 tons, all of which was moved between April 15 and December 12.

The present line has a ruling grade of 0.3 per cent against northbound movements, except for a grade of 0.5 per cent extending most of the distance from Columbus to Powell (14 miles) which is operated as a helper grade. The ultimate plan is to provide a 0.2-per cent grade against northbound traffic and a 0.4-per cent grade against southbound movements for the entire distance from Columbus to Toledo. In pursuance of this plan the second-track work undertaken in the stretches shown on the map has been constructed to conform to these limits of grade. It will be noted that the double-track work undertaken thus far does not include the section between Columbus and Delaware. The elimination of the pusher grade within these limits will require a more or less complete change of location and this has been deferred until some later date.

One unique feature of the plan for the work is the manner in which it is proposed to operate the double track to suit the peculiar nature of the traffic. Coal trains moving northward loaded and coming back light constitute the bulk of the traffic; the remaining train movements comprise two passenger trains and a local freight in each direction. Since the greatest capacity of a single track can be secured with



Location of the New Second Track

all trains moving at a uniform speed in one direction it is planned to assign the east track exclusively to the northbound tonnage trains. The west track will be used by the northbound high speed trains, both passenger and freight, in addition to all of the southbound traffic. To this end an adequate number of 100-car passing tracks are being provided on the west side of the southbound track with no passing tracks on the northbound side and only a limited number of cross-overs between the two main tracks. Tonnage trains are now being hauled by Mallet locomotives rated at about 5,000 tons (northbound). This rating will be increased appreciably with the completion of the 0.2-per cent grade line.

Grading

The grading is primarily fill made from borrow. There are very few cuts. With one exception the fills are low. Just north of Delaware an embankment about 1,000 ft. long with a maximum height of 38 ft. was widened for second track, with material from a shovel pit east of the right-of-way near Troy, operated by N. K. Sneed of Huntington, W. Va., who has the general contract for the work from Delaware to Prospect. This same pit was also used to supply material for building the smaller embankments that could not be made readily by team work from side borrow. The material was handled in Kilbourne & Jacobs cars, unloaded from the main track and pushed into place with a Jordan spreader.

Between Prospect and Marion the work is under contract to the J. T. Adams Company, Columbus, who conducted the work in a manner similar to that above described. A shovel pit was opened at Owens, this being over a limestone quarry where an arrangement was made with the owners to remove the stripping. About 150,000 cu. yd. were taken out to a depth varying from six to eight feet. The grade change mentioned above is located at Owens, extending from about a mile south to a half a mile north and with a maximum depth of fill near the station of about seven feet.

While this work is of limited proportions, the manner in which it is done is of interest. The embankment was widened to the level of the existing track by unloading from the main track and using a spreader. A construction track was laid on this new embankment which was then completed to the new grade by raising the track with material from the pit. It was proposed to transfer the traffic to the newly raised track and repeat the operation under the old track but the possibility of interrupting traffic through soft conditions in the new embankment led to the discarding of this plan in favor of one requiring the raising of the operated track under traffic, using blast furnace slag for the filling material. This plan worked out very well except that the coarseness of the material caused some difficulty in handling it.

The raises were made in depths of about one foot, averaging from 1,500 to 2,000 ft. in length per day. The grade change at Owens included the elimination of a highway grade crossing just north of the station through the use of an underpass of 24-ft. span with 13 ft. vertical headroom. The structure consisted of two concrete abutments with a longitudinal steel through deck.

North of Alveda some light work is being done with rather unusual equipment for railway grading, a Thew revolving shovel being used to load $1\frac{1}{2}$ -cu. yd. Koppel cars operating on a track of 2-ft. gage. Strings of these cars are pulled by a Koppel steam locomotive for the long hauls and by a horse for the shorter hauls.

Terminal Facilities

One of the most important features of the auxiliary facilities in the way of an entirely new installation is a coal

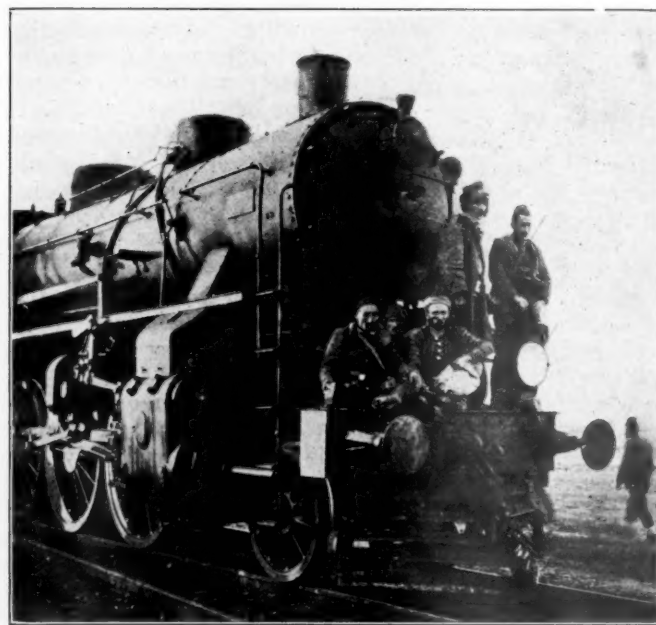
and water station south of Carey. Here two passing tracks will be provided between the two main tracks, each with a capacity of two 100-car trains. At about the mid-length of the passing tracks a Fairbanks, Morse & Company reinforced concrete coaling station of 500-ton storage capacity will be provided to serve all four tracks. Water cranes will also be installed, water being piped from the city water supply at Carey.

At Walbridge, the additional engine terminal facilities include a nine-stall addition to the existing roundhouse. This is of timber construction with brick walls. Eight of the stalls will be 110 ft. deep and one 90 ft. The center line of the ninth stall is on a line with the approach track on the other side of the turntable, so that this stall can be used as a push-in track for dead engines. The extension to the roundhouse is of the same construction as the old part and will be heated by direct radiation in the pits and along the back wall.

In addition to the roundhouse extension, a 500-ton coaling station of the Fairbanks, Morse & Company reinforced concrete type and two Robertson ash hoists are also being installed, while adjoining the roundhouse is a new toilet and washhouse. Considerations of sanitation in the absence of a sewer system in the vicinity led to the provision for a complete sewage disposal plant consisting of septic tanks and settling basins.

Another improvement of largely local utility is a new engine terminal at Marion for the use of switch and local freight engines. This comprises a five-stall roundhouse with a 100-ft turntable and a Roberts & Schaefer coaling station. The engine house is of reinforced concrete with brick curtain walls.

All of the work between Carey and Toledo including the building work is being done under a contract with the A. S. Hecker Company of Cleveland. In conformity with the custom on most work undertaken during the war all contracts in connection with this work have been conducted on a cost-plus-percentage basis. The work has been handled under the general direction of William Michel, chief engineer of the Hocking Valley and under the supervision of W. L. Roller, resident engineer, both with headquarters at Columbus, Ohio.



Turkish Troops and Refugees at Seidler

Standards for the Maintenance of Freight Equipment*

Keeping Up the Condition of Cars to Meet Demands of Traffic; Uniform Classification of Repairs

By H. L. Shipman,
Equipment Inspector, Atchison, Topeka & Santa Fe

DURING THE PAST YEAR the maintenance of freight cars has been influenced by new conditions, due to the general pooling of equipment. This change is particularly noticeable in the box car. Formerly there was a normal percentage of from 35 per cent to 40 per cent of the box cars on the home lines. At the present time this percentage has fallen as low as 7 per cent to 12 per cent. Thus each road has less control over the maintenance standard of its own equipment. It would seem that some standard of maintenance should be established and all roads compelled to keep all freight cars on their lines up to that standard. This percentage should undoubtedly be higher than the standard now maintained by many of the smaller railroads, but some method should be devised to force all roads to come up to this standard. Unless this is done, under present conditions, the average standard of all cars will fall considerably lower, and those roads, which under normal conditions would maintain this standard, will be helpless to keep it up.

There is a limit to the maintenance of equipment beyond which it is not practical or economical to go. If it were possible to maintain all freight equipment in 100 per cent condition, it would not be economical because there are many commodities that can be handled just as efficiently and satisfactorily in a car in fair condition as in one in 100 per cent condition. Since all cars in service are continually wearing out, or deteriorating, all that can be hoped for is to maintain in good condition a sufficient number of cars to handle the commodities that require a first-class car.

There are certain kinds of freight that require a box car, others a refrigerator, stock car, tank car or gondola and other freight may be handled just as well in several of the different kinds of freight cars. Some loadings require the cars to be in first-class condition and others only in fair condition. For example, a box car to handle grain, flour, sugar, or groceries, should be in the best condition possible. The siding must be tight, the roof non-leaking, and the floor and lining level and smooth, so as not to chafe or injure the contents. Wool, raw cotton, hay, brick, etc., may be handled in a car in fair condition without damage. A leaky roof or open siding will not injure these articles, and they cannot fall through cracks in the floor as would bulk grain. The only essential for cars handling the last mentioned articles is that the frame work of the car be strong enough to hold the load and that the trucks and draft gear be in good condition.

A refrigerator car must always be in good condition in order to protect its lading, due to the fact that the requirements of this service are very rigid. A stock car should be in good condition in order to handle live stock without damage, but the same car in fair condition will haul barreled goods, rough lumber, ties, lump coal, and many other articles, very satisfactorily. A gondola must be in very good condition to hold slack coal without loss, but will hold lump, coal, coke, scrap iron, etc., if in only fair condition.

On a typical western road there was a total of 1,240,324 car loads of revenue freight handled during the year 1917. This freight was subdivided under five general headings, namely, Products of Agriculture, Products of Animals, Products of Mines, Products of Forests, and Manufactured and

Miscellaneous Articles. The number of car loads of each of these classes of freight was as follows:

Products of agriculture.....	298,717
Products of animals.....	172,836
Products of mines.....	385,836
Products of forests.....	99,301
Manufactured and miscellaneous articles.....	283,634

A close analysis of this freight as a whole shows that 72.6 per cent should be handled in cars of first-class condition in order to avoid possible loss or damage due to the condition of the cars; 27.4 per cent of the freight could be handled just as satisfactorily in cars of fair condition.

An extended investigation in the train yard and in a large repair shop of the causes of repairs to freight cars disclosed the fact that only a very small percentage of freight car repairs become necessary due to "time and the elements," or, in other words, rust and decay. To make this study, the repairs to freight cars were subdivided into four general headings representing the principal parts of the car, as body, draft gear, truck and air brake repairs. The investigation showed that most of the repairs required by the bodies of these cars became necessary due to time and the elements, and the next important cause of repairs to the body was starting, stopping and switching or load shift under shock. The draft gear and truck repairs became necessary chiefly due to the starting, stopping and switching of the car. Load shift causes the ends of the car to be pushed out, and posts broken and the siding and lining broken. A very small percentage of the repairs to draft gear or trucks was necessitated by time and the elements. Nearly all of the repairs to draft gear was caused by starting, stopping and switching. The draft gear is broken or weakened by shock in switching and the trucks need repairs because of stopping, as well as shock. The items of the greatest expense in truck repairs are brake shoes, brasses and wheels. It is very seldom a truck has a broken side frame or bolster. The air brakes need repairs because of running and stopping the car. These parts seldom are renewed because of rust.

Combining the causes of repairs of the several parts of the car, the results showed that 47.2 per cent of the repairs to cars became necessary due to the running of the car, and time and the elements; 52.8 per cent of repairs to cars was necessitated by starting, stopping and switching, and the loading and unloading of the car. The 52.8 per cent in starting, stopping and switching and loading and unloading should be again subdivided to show the repairs due to the necessary wear of starting, stopping and switching and the unnecessary wear or abuse of the car. The subdivision shows that 33 per cent of the repairs to freight cars would be eliminated if there were no draft gear, no end sills, posts, siding or lining broken by shock or cornering the car, and no slid flat wheels or cut journals.

The next question to be considered is what percentage of the freight equipment can economically be maintained in first-class condition. As mentioned above, 72.6 per cent of the freight equipment should be in first-class condition to carry the freight of this trunk line without damage or loss due to the condition of equipment. Is it feasible or practical to maintain this percentage as a standard of condition?

In a recent survey of bad order cars on several of our Western roads, it developed that the higher the percentage

*From a Paper Presented Before the Western Railway Club.

of revenue cars bad order on any line, the more men were employed per 1,000 revenue cars on the line, and the greater was the percentages of revenue cars that were repaired each month. Conversely, the lower the percentage of revenue cars' bad order on the line, the smaller was the percentage of cars repaired each month. Comparing four of these roads, and averaging two of the higher and two of lower percentages, the results were as follows:

	Per cent of revenue cars, bad order	Per cent of cars repaired to revenue cars on line per month	Number car men employed per 1,000 rev. cars on line	Total number cars repaired per month	Number revenue cars on the line
Two higher ...	8.4 per cent	135.4 per cent	76.8	53,248	43,303
Two lower	3.0 per cent	59.4 per cent	37.7	25,909	37,443

Very few roads have a very high percentage of their own cars on their line. The freight car is common property today, therefore, it cannot be supposed that there is any very great difference in the physical condition of the cars on these four roads. These figures simply mean that different roads have different standards of maintenance, and that a road with a high standard will endeavor to keep the condition of freight equipment to a higher standard than the other road. In order to accomplish this end, the one road hires more men and consequently bad orders and repairs more cars than the other. These roads with the high standards of maintenance have found that the old saying "a stitch in time saves nine" is just as true when applied to a freight car as in its original application, and that the net results will show up on the credit side of the balance sheet.

A road with a high standard will cut down train delays and damage claims due to defective equipment, and as a result will pay a greater dividend than the road with the low standard of maintenance. A shipper prefers a road with a high standard of maintenance because he knows his products will receive better attention than on a road with low standards. There will not be the delays en route due to defective equipment and the goods will arrive in better condition.

One step toward distributing repair work among all railroads so as to overcome the present practice of one road making only light repairs and another doing the substantial work, would be to have a standard classification of repairs. This would make it easier to judge work done and the output. I would recommend the following outline as a reasonable and satisfactory classification for the subdivision of repairs:

CLASSIFICATIONS OF REPAIRS TO FREIGHT AND WORK CARS

HEAVY REPAIRS	MEDIUM REPAIRS	LIGHT REPAIRS
One or two pair draft timbers.	One or two pair draft timbers.	One or more pair wheels renewed.
Two or more sills renewed or spliced.	One end sill or new end and siding.	Draft timbers tightened and new bolts.
One or two end sills.	One pair draw sills spliced.	Side door rehung.
Two or more side or door posts.	Roof relaid or new roof applied.	Couplers renewed.
One-half or more outside sheathing renewed.	Door rehung or new door applied.	Body tightened.
Entire roof relaid or renewed.	Trucks repaired.	Deadwoods repaired or renewed.
Flooring renewed or repaired.	Cars trussed.	Brake beams repaired or renewed.
Door rehung or new doors applied.	All new work painted.	(Any one or more of above items constitute medium repairs.)
Car trussed up and body tightened.	(Any five or more of above items constitute medium repairs.)	
Two trucks given general overhauling.		
Cars repainted and stenciled.		
(Any seven or more of above items constitute heavy repairs.)		
RUNNING REPAIRS		
Uncoupling attachments repaired.		
Grab iron renewed or repaired.		
Brasses applied.		
Brake shoes renewed.		
Running boards, repaired.		
Brake connection and lever.		
Side door rehung.		
(Any one or more of above items, or similar thereto, constitute running repairs.)		

It is my opinion that such a classification will be more satisfactory than to have heavy, medium, light and running repairs subdivided on a money or hourly basis. The objection to the hourly or money basis of subdivision of repairs is that no record is kept of the cost of either labor or material on individual cars. It would be impossible to keep these

records without a great addition to the overhead expense. The proposed plan can be used without any addition to our present clerical force.

In conclusion, the question of freight car repairs may be summarized as follows: Freight equipment should be maintained in approximately 75 per cent condition in order to handle freight without danger of loss or damage due to the condition of the freight equipment; this percentage condition cannot be maintained without the co-operation of all roads, because the freight car today is common property so far as service is concerned.

DISCUSSION

H. H. Harvey (C. B. & Q.): The statement is made in Mr. Shipman's paper that 72.6 per cent of all freight cars should be kept in first-class condition. I question whether it is necessary to have that figure quite so high. It would vary greatly on roads in different localities and will even vary on the different divisions of a single large road. There are many commodities that should never be loaded in a first-class car. One of the worst abuses prevalent on our railroads today is loading hides, fertilizer, immigrant outfits and similar material in first-class equipment. Car men in general are dilatory about calling attention to the abuse of cars. Since cars have been loaded up to the capacity of the axles there has been a great deal of overloading of light cars, and I think the sooner we get back to the 10 per cent overload, the better it will be for the equipment.

J. H. Milton (C. R. I. & P.): The only way that a car can be kept in service with the heavy tonnage handled at the present time is by reinforcing it. When we can get a system in force throughout the United States that will make all the roads reinforce their cars we will get good equipment. Until that is done we will simply repair the cars from time to time and get nothing from our labor. The majority of railroads are spending \$50 to \$75 to repair cars which only move off the repair track to become bad order again within a week or two. By spending \$400 or \$500 on these cars they could be put in first-class condition. The equipment is getting worse every day, particularly on the Eastern lines.

F. P. Schultz (Chicago Car Interchange Bureau): The designs of cars are so varied that it is practically impossible to keep a stock of the proper material for reinforcing these cars away from the home road. The Railroad Administration is now moving cars in bad order to the owning roads, and when they get home it is to be hoped that some rules will be formulated that will keep the car on the home road if it is not up to a certain standard. As far as the box car is concerned, I think as long as it is of a design that is kept in general service, it should be maintained in 100 per cent condition. A rough freight car may be given a load that it will carry, but when it is unloaded it may be in a district where there is nothing but grain loaded and the rough freight car will bring back the load of grain which it is not fit to handle. The proper way to handle the rough freight car is to mark it bad order if it is sent out under load.

W. G. Wallace (American Steel Foundries): We have heard a great deal about what has been accomplished by the united efforts of the men in the different regions in handling traffic. Would it not be a good idea to have the transportation men keep more closely in touch with the mechanical men and to prevent car repairs, instead of having so many cars bad ordered? There are a good many things that could be done by getting the transportation officers more interested in the mechanical department problems.

Mr. Milton: I believe the type of underframe required under cars depends largely on the type of draft gear. If a friction draft gear is used the entire shock is thrown on the draft sills. After a spring gear has traveled 1 3/4 in. the coupler strikes the dead wood and the shock is distributed

on all the sills. This takes the load off the draft sills to a certain extent, and for that reason I think it is useless to have a heavy underframe under cars equipped with spring gear.

G. S. Goodwin (C. R. I. & P.): I agree entirely with what Mr. Milton has said. Incidentally, it might be of interest to note that mechanical department Circular No. 8 provides that draft sills must be constructed to accommodate friction draft gear, and also that the coupler shall be applied with 3 in. clearance between the coupler horn and the deadwood. The circular permits the application of two class G draft springs which have a travel of about $1\frac{7}{8}$ in. That means that the spring gear must take all the shock, since the horn of the coupler is $1\frac{7}{8}$ in. away from the dead wood. It is easy to see what will happen under those conditions.

E. H. Hall (C. G. W.): I do not see how there can be much improvement in the condition of equipment as long as the present rules are enforced. Order No. 12 states that Interstate Commerce Commission accounting rules must be

observed. These rules provide that when the cost of repairs exceeds the major portion of the cost of the car to the carrier, the equipment must be retired. With the present high cost of labor and material the cost of repairs often exceeds 50 per cent of the book value, particularly when equipment has been acquired second hand or through receivership. To get such cars back into service requires additions and betterments, which are chargeable to the corporation. It seems that the only thing to do in such cases is to put the cars on a side track until the Railroad Administration or the corporation can agree on the distribution of cost.

F. C. Kroff (Pennsylvania Lines): We have filed the inspection report on a considerable number of cars and have them set aside awaiting disposition. Up to the present time we have received no instructions from the Railroad Administration regarding this equipment.

C. J. Juneau (C. M. & St. P.): We are holding about 200 cars between Minneapolis and Milwaukee awaiting disposition and many more are coming in.

Conservation of Material by the Store Department*

Care in Ordering and Handling Will Prevent Waste;
Systematic Methods Needed in Reclamation

By J. G. Stuart

General Storekeeper, Chicago, Burlington & Quincy

CONSERVATION LIKE MANY other good things should begin at home. The storekeeper should begin his conservation when he is ordering material. In many cases he orders material which is not really needed and thereby builds up a condition which will call for conservation later. Too much care cannot be exercised in ordering supplies—whether they be for store stock or for special material which is not ordinarily carried in stock. Once an article is ordered that is not really needed we are very fortunate indeed if we are able to get 100 per cent of the value out of it, but if we can prevent the ordering of the article we have surely saved 100 per cent right at the beginning and have also saved the labor of ordering, handling and hauling.

Often the work of ordering material is delegated to someone else. This is bad practice, as there is no more important work in the store department than looking after the ordering of material.

Proper Handling as Important as Intelligent Ordering of Material

The next step in conservation and really one of very great importance is proper care and handling of material. A great deal of money is lost to railroads every year by breakage, leakage and marring of material in various ways, which unfits it for service. These sources of loss can be materially reduced if supplies are properly handled and cared for.

Every man having to do with the handling of material and particularly those who are handling it after it is unpacked should be instructed, so far as it is possible, as to the nature of the material, the use to which it is to be put, the way in which it may be damaged, so that it loses its usefulness entirely, or at least is injured so that only partial service may be had from it. A little rough treatment, in most cases entirely unintentional on the part of the man handling the material, causes expense away out of proportion to the value of the article itself.

*From a paper presented at the annual meeting of the Railway Storekeepers' Association in Chicago on January 25.

A great many articles, many of them of considerable value are left exposed to the weather and thereby rendered almost valueless, or they are handled roughly and must be scrapped because of broken threads or other damage. A carton of electric light bulbs is given a little rough handling and a lot of the lamps are spoiled; although there may be no great difference in the appearance. Iron or steel castings are often finished and then left exposed so that finished surfaces become rusty. Oil applied to the finished part will preserve the casting.

Rubber hose and all kinds of rubber naturally deteriorate after they have been on hand any great length of time. This should be thoroughly understood by those handling them so the sheet rubber, packing and hose which have been on hand longest will be used first. Proper care should be taken so that rubber is not stored in the bright sunlight or in some unusually dry place; when rubber hose is dated, these dates should be observed by mounting and using the oldest first.

Oil is sometimes shipped from oil houses in cans, barrels and transportation tanks which have not been properly cleaned or have previously contained oil of a different kind. Occasionally illuminating oil is put in a container that has contained lubricating oil and the oil is contaminated so that it is not fit for use. In other cases containers are not properly inspected and after being filled and shipped, leaks develop which cause considerable waste of oil and often damage to other freight in the same car or perhaps makes the floors oil soaked and prevents the use of the car for high grade shipments.

Exposure of Material Causes Waste

Finished lumber is often stored out of doors and considerable loss is occasioned by warping and splitting. It is a common sight to see a railroad lumber yard where practically all of the lumber is stored outside and only a short distance away a commercial lumber yard where the lumber of the same kind is under cover.

Track bolts are often piled outside and the nuts rust in the

bolts to such an extent that considerable extra labor is needed when the bolts are put in the track. If it is necessary to store outdoors and the bolts are not oiled when purchased they can be easily oiled by immersing the keg in an oil bath at time the bolts are received. The oil bath and the extra handling does not amount to more than a couple of cents per keg.

Track spikes as well as bolts are often piled outside in such a way that the kegs are apt to fall apart and a great deal of extra labor is necessary to handle the spikes although the contents may not be injured.

Machine bolts and all kinds of rods and forgings having thread connections are often left piled in such a way the threads are exposed and in many cases entirely spoiled or if not there is extra work in getting the nuts on and off, which would not be necessary if the threads were properly cared for.

Frogs and switches are generally piled outside and often rust badly. A little oil applied to the bolts and nuts will in most cases prevent the rust.

When packages reach the destination with the contents broken or damaged, it not only means that the value of the material has been lost but perhaps a further loss will be entailed waiting for a duplicate shipment.

Even though material has deteriorated to some extent the store department can charge it out at its stock value. But even though we do charge it out at its original value something has been lost. In order properly to conserve material every man on the road must look at it from the standpoint of the railroad and not from the viewpoint of his department alone.

With proper attention to the housing of material large losses can be avoided and while there are perhaps no figures to show that these losses are, anyone who has ever been around a storehouse realizes that they are really serious.

A storekeeper is always in a position to call attention to defects in large amounts of material used. Many times a design is not as good as it should be, or there is a weak spot in a certain casting or for other reasons an unusually large number of the items are being used. By carefully watching the stock book the storekeeper will note this unusual consumption and is in a position to report to the department interested so it may investigate and correct the design or strengthen the casting so as to prevent excessive breakage.

Reclamation

One phase of conservation that has come to the front very prominently is reclamation. Notwithstanding the exercise of every possible care in the ordering and caring for material, there is still a great deal of material that is available for reclamation; material that has been used once and by repairs or reworking can be made fit for service again, or material that has been used and by a change in form may be made fit for other purposes.

Some may still question the need of reclamation on railroads, but if these had visited a certain scrap dealer's yard in Chicago, where railroad scrap is handled, a short time ago, I am positive they would be convinced that reclamation is needed and needed badly. In this particular yard there were several thousand tons of scrap and in the scrap were many nuts, bolts, washers, small parts of couplers, knuckles and other smaller items which were perfectly good or could have been made so with very little work. In addition, there were many couplers that did not require any work; in fact, the scrap dealer wanted to sell a carload of good couplers. In addition to the couplers which should have been saved and which did not need any repairs whatever there were a great many which could have been repaired in any up-to-date reclamation plant. There were many brake beams, some needing heads, some fulcrums and some other small parts, but in the great majority of cases very small repairs would have made them fit for use again. In fact,

one brake beam, so far as could be ascertained, needed only one nut to make it fit for service.

Reclamation is a subject that requires constant and careful attention and unless most careful attention is given we are apt to find that instead of making a saving we are only incurring additional expense.

Two objectives stand out clearly in reclamation. One is the need of the material after it has been reclaimed, and the other the fact that material can be reclaimed for less money than it can be purchased for. It is true that it often pays us to reclaim material even though it costs decidedly more than it can be purchased for, but this can only be practiced in emergencies or when the item reclaimed is such as will enable us to put a far more expensive item into service. For example, it might not pay to reclaim brake heads under certain conditions, and yet, if we were short of brake beams and also out of brake heads, it might pay us to spend considerable extra money in order to reclaim brake heads so as to enable us to put brake beams into service. As stated above, however, such cases should be the exception.

The constant danger in reclamation is that, unless stock is very carefully watched, material will be reclaimed even though it is not needed, merely because it has been the practice to reclaim it.

The maintenance of accurate and reliable records is essential to prevent the reclamation of material which will cost more than its purchase price new. One thing should be borne in mind at all times—that records must be correct. There may be some justification for a man endeavoring to fool someone else, but it hardly seems possible that there is any justification for his fooling himself, and the man who makes false entries in his reclamation record is simply practicing self-deceit.

To maintain a proper cost record we should have the different articles reclaimed, accounted for separately. It is not at all wise to group a lot of items; for, even though we may be making a saving on the group as a whole, some of the items may be costing too much to reclaim and therefore should not be reclaimed.

The saving made by reclamation will, of course, be the difference between the market value and the total cost of the reclaimed article (including its value as scrap, plus the value of any additional material used in reclaiming it, and the cost of labor, including supervisory and clerical forces and shop expenses). This cost should be checked up often enough to reflect the changes in market conditions or labor costs.

A scrap dock is usually located at a point which will provide good shipping facilities to points where scrap is sold. Generally the reclamation plant is located close to the scrap dock. In many cases a better location for the reclamation plant could be found, but on account of the extra handling which would be necessary on the material it is generally found better to have the reclamation plant at the scrap dock.

In most cases material which is fit for further use should be reclaimed at the point at which it is released—that is, as much of it as can be used at that point. Strict attention should be given to this to prevent long hauls to scrap docks and back to the point where the material will be used. Of course, all of the material cannot be reclaimed at the point at which it is released, therefore plants with larger capacity and better facilities should be established at central points where the minimum haul will be obtained.

Material can be reclaimed more cheaply and in a great majority of cases better at large centrally-located points, as in this way it is possible to get laborers who specialize on reclaiming work with special machinery and therefore do this work better than regular mechanics, although they are in many cases not as highly paid as mechanics would be. In fact, until recently a reclamation plant was a splendid place in which to use handy men.

In establishing or maintaining a reclamation plant it is important to get the co-operation of the other departments in using the material that is reclaimed. There seems to be a natural prejudice against using second-hand material or material that has been worked over and it seems that even workmen prefer to work with new material. We must secure the aid of the foremen of the other departments so they will be firm in their insistence that reclaimed material be used wherever it is suitable.

It is certain that some material will come to scrap or reclamation plants which should not have been scrapped. If the store department makes a great stir over this and perhaps brings down criticisms on those who send it in, such action will, to a great extent, defeat our object. Other departments should not be allowed to become careless in sending in a great deal of usable material, but where there are occasional slips the matter may be called to the attention of those who are to blame as a matter of information, rather than censure. I heard one man remark that he would spend \$10 in sorting over his scrap rather than have ten cents' worth of usable material found in the car which his men had loaded. Let us endeavor to keep away from such uneconomical practices.

Learn from Reclamation Methods of Other Roads

It is interesting to go over various roads and investigate the different practices and to note that one road effects large savings on certain items while on another road the same things are not reclaimed at all. No two roads seem to be reclaiming all of the same kind of material, so there is something for each one to learn from every other road.

Recently an inspector was sent to a road when they were loading out scrap couplers and knuckles to pick out such couplers and knuckles as in his opinion could be reclaimed. He was instructed not to take anything until the employees of the road had decided that the article was scrap. Out of one carload of scrap which was shipped he picked out 131 couplers and 263 knuckles which in his opinion could be reclaimed. After allowing for the expense of repairing them and also allowing for their value as scrap, the net saving amounted to over \$1,500, considerably more than the entire carload of scrap was worth. This is not an exception—the same thing was tried on another railroad with almost the same results.

Our reclamation men must be broad minded. Those who stay at home generally lag behind and the men of small minds who go to other places, not with the idea of learning anything but to satisfy themselves that their own methods are best, usually are the ones who will fail on reclamation work. The men having to do with reclamation must be broad minded and constantly on the lookout for improvements, constantly searching for additional items to reclaim. Many items were legitimately scrapped five years ago which can now be reclaimed by the use of acetylene. Constantly keeping up to date on methods is necessary in reclamation work.

Items Reclaimed with Profit

I do not wish to give an entire list of all material that can be reclaimed on the railroads. Such a list would be almost endless. In making mention of the few cases of reclamation which follow I have picked out those which are not so common and those which have come to my notice within recent months.

Steam hose gaskets usually costing about 35 ct. each may be reclaimed for 6 or 7 ct. and put back into service. Bolts of one inch diameter and larger, where the head is good, may have an end welded on for threading at a saving of perhaps 50 per cent of the cost of new material. Cast iron wheels may have the flat spots ground out of them by grinding the entire tread of the wheel and making them perfectly round again.

Cattle guards, gates and sign posts may be made from scrap flues. Good scrap pipe and short pieces of new pipe may be made into nipples. Several railroads are welding six-foot lengths on flues which would otherwise be scrapped.

Long time burners usually costing about 35 ct. may be reclaimed and put back into service for not to exceed 3 ct. One road has been saving all of the scrap stay bolts and double refined iron, rattling the lime from them and making slabs of this scrap which are forged into driving rods. Track spikes are reclaimed on most roads. One road has been reclaiming them and sorting them into No. 1 and No. 2; the better to be used in yard and other tracks where there is no great speed and the No. 2 which are a poorer grade, to be used on tracks around shops, rubble car tracks and storage tracks.

Old track shovels, when worn to such an extent as not to be serviceable on sections, can be used for stations, way cars, watch shanties and other places where a coal shovel or small shovel is needed. Second-hand scoops not fit for firing engines are perfectly good for handling cinders on sections.

All kinds of sheet iron as well as scrap flues may be used for making washers. Tie plates, after having been in service, may be repunched and used with lighter rail. Frogs, crossings and switch points may be built up, either in the track or at scrap rail yards.

Cement sacks in all cases are returnable to the shippers. The great question is, does the store get back all of the empty sacks? To accomplish this one road is keeping a very careful check on all of the sacks of cement sent out, showing the car number, date of shipment, consignee, and point to which shipped and is tracing to see that the same number of empty sacks are returned after the cement has been used. Each individual job must be followed up or the best results will not be obtained.

A large number of roads are upsetting their larger car axles and making them into the next smaller size. This accomplishes a large saving. Most roads are insisting that old material be turned back when new material is issued. This has the effect of bringing back to the store many articles which can be reclaimed. One road has made a saving by numbering each lantern issued, charging it to the individual and insisting that the old lanterns be turned in.

There is room for a great saving in the use of secondhand lumber. Roads are constantly taking out old bridges and, though the lumber may not be good enough for use in bridges again, it is satisfactory for other purposes. A resaw established in a lumber yard will generally pay 200 per cent per annum on the investment. In addition to cutting up and getting second-hand lumber in service it enables the lumber yard to furnish any odd size pieces that may be called for.

Wonderful results have been obtained by welding and building up couplers, knuckles, bolsters and other steel castings by the use of acetylene.

In many cases a rerolling mill will give excellent results. I do not think that the returns are nearly as large from a rerolling mill where large sizes can only be reduced to smaller ones, as from a rolling mill where scrap iron may be piled and rolled into any size bars needed. A rolling mill, of course, can only be worked to good advantage on a large road where there is a great deal of scrap of the proper kinds for rolling obtainable and where there is a large demand for bar iron.

To get the best results from a reclamation plant the work should be kept up to date. If large quantities of reclaimable material are allowed to accumulate it is almost certain that the road will buy new material when other material might be reclaimed and put back into use. A reclamation plant has many other advantages. One is that it enables a road to help itself in emergencies as it can generally get from the reclamation plant a few of almost any article needed. It

also has the advantage of cutting down the investment in stock as material is immediately available after reaching the reclamation plant; in fact in many cases it can be reclaimed and put back into service on the same day on which it is received and in most cases within two or three days.

I have not attempted in any way to exhaust this subject;

in fact the subject is inexhaustible. I have merely tried to point out some of the fundamentals of conservation and some few particular items. I believe that it is a work that should be given a great deal more attention than has been given to it in the past and if this attention is given I am sure we will get results that will make good returns to the railroads.

The Elimination of Unnecessary Telegraph Messages

Traingram System in Use on the St. Louis-San Francisco Prevents the Abuse of This Service

By J. H. Brennan

Superintendent of Telegraph, St. Louis-San Francisco, Springfield, Mo.

THE DESPATCHING of important communications by train mail in specially provided envelopes to distinguish them from ordinary railroad mail is not a new idea. Most railroads have had in effect such a service in one form or another for several years. The St. Louis-San Francisco, prior to the inauguration of the present traingram system, had a standard mailgram envelope, which was originally designed for mailgrams, but because of the lack of proper supervision and restrictive instructions it became so commonly and indiscriminately used that the purpose for which it was designed became nugatory.

The present traingram plan on the St. Louis-San Francisco is, in part, the outgrowth of a campaign to eliminate unnecessary telegraphing. The stereotyped explanation that the wire was used because the mailgram service (or railroad

was assigned a sub-letter, to be followed by a number, the numbers to run consecutively on each desk. These letters and numbers are preceded by the telegraph call of the office at the point of origin. For example, assuming that the office of the superintendent of transportation at Springfield is assigned the letter *S*, and the chief clerk in that department is assigned the letter *B*—the telegraph call for Springfield being *S*, his first traingram on the first of each month bears the following symbol: "S-S-B-1."

Consolidating offices were established at the more important points and placed under the authority of the managers of the relay offices; or, where there was no relay office, under the division operator or agent. At these points outgoing traingrams are delivered, open, to the consolidating office, where they are consolidated and their numbers entered in duplicate on a form provided for that purpose which shows the envelope number, symbol, destination, train, date and time. The duplicate copy of this record is enclosed with the traingrams in an envelope. This envelope is delivered by special messenger to the train baggageman, who is required to receipt for it. At the receiving stations, the contents of the envelopes are checked against the forwarding record, and if any discrepancies are found they are adjusted with the forwarding office by wire.

All traingrams addressed to individuals at a point where there is a consolidating office are, as far as practicable, placed in one envelope and addressed to the consolidating office, instead of being addressed to the individuals direct. All traingrams are "tied out" by the train baggagemen. This method of handling eliminates delays that might occur if these envelopes were to pass through the regular railroad mail channels.

At consolidating offices messengers meet all passenger trains on which traingrams are forwarded, delivering outgoing traingrams and receiving incoming ones. The latter are taken immediately to the consolidating office, where they are checked with the forwarding offices' record; and they are then time-stamped and delivered. It will readily be seen that with the traingrams listed at the originating station, together with the number of the envelope in which such traingrams are forwarded, and a check of the forwarding record at the receiving office, it is possible to trace a traingram from the sender's desk to the addressee's desk.

This Envelope will be used only for forwarding

FRISCO **TRAINGRAMS**

Form 3407 Standard

SYMBOL NUMBER

By Train No.

From

Date Time

Train Baggage

TIME	DATE	TIME

Received

mail) could not be depended upon, especially for deliveries, made it apparent that the objectionable features must be overcome if the wires were to be relieved of the correspondence that did not actually require telegraph service. Recognizing that a dependable traingram service was a necessary adjunct to a campaign to abolish unnecessary telegraphing, a circular was issued by the chief operating officer inaugurating the system under the supervision and control of the telegraph department.

The Application of the System

Traingram blanks and envelopes of a distinguishing color (blue) were provided, and their use restricted to the traingram service. For the purpose of identifying and maintaining a service record on traingrams, each department was assigned a letter or a combination of letters, and each desk in the department that was authorized to send traingrams

Numbering and Checking the Traingrams

Traingram envelopes between consolidating offices are numbered consecutively. Where there are several trains a day between these offices, as is the case between St. Louis and Springfield, certain trains between the two points are designated as the ones on which traingrams will be for-

warded. If traingram envelopes are forwarded on other than designated trains, the receiving office is notified by wire of such irregular forwarding.

Numbering the traingram envelopes consecutively enables the receiving office to check failures. If the sequence of the numbers is broken, the forwarding office is immediately notified by wire, and the senders of the traingrams in that envelope are immediately advised. Traingrams addressed to individuals at points where there are no consolidating offices are recorded at the sending but not at the receiving stations.

The term "traingram," as describing this service, is used advisedly. The service covers only communications that are to be forwarded by train. Interchange of memos and correspondence between offices located in the same city is not contemplated.

This system has been in effect on the St. Louis-San Francisco for over four years, and has proved entirely satisfactory and dependable. The loss of a traingram is as rare as is the loss of a telegram, and as explained above, when necessary, the service of a traingram can be investigated and determined as accurately as that of a telegram. On a railroad situated as is the Frisco, where practically every division headquarters can be reached from operating headquarters by overnight train service, the service can be used as an auxiliary to the telegraph, with a resultant improvement in the preferred service by wire and a decrease in the cost of operation.

The Saving Accomplished

During the month of December, 1918, a total of 33,418 traingrams, or an average of 1,078 a day, were handled between consolidating and the more important offices. While it is true that not all of these communications would have been forwarded by telegraph had there been no traingram service, it safely may be stated that 75 per cent of this business, or an average of 809 messages a day, would have been filed for transmission by wire.

The telegraph service may, therefore, be credited with a saving of 809 messages daily. This number of messages reduced to operator hours (one sending operator and one receiving), means that seven operators would be required to handle this business, at an average monthly salary of \$159 each, a total of \$13,356 per annum. From this should be deducted \$3,000 yearly for additional messengers and clerks employed to handle the traingram service, leaving a net theoretical saving of \$10,356 per annum, made by the traingram service.

A further feature of value of this service is the absence of any restriction in the length of the traingrams, such as obtains under a censored telegraph service. In the above estimate, approximately 300 traingrams handled daily between local points, of which no record is maintained, were not taken into consideration.

The traingram blank, on blue paper, is like a telegraph blank, with a note at the top to the effect that it must not be used for any purpose except traingram service. The traingram envelope shown, reduced in the engraving, is 9 inches long. The record, form 1214, filled out to be enclosed with the traingrams in each envelope which is sent from a consolidating office, is on a sheet 8½ in. wide and 10¾ in. high. The headings of this sheet are shown at the bottom of the page.

The Belgian Railwaymen and German Oppression*

BELGIUM HAS, IN PROPORTION to her size, the greatest length of railway of any country. There are 2,859 miles of line, representing 30.29 miles for every 100 square miles, as against 22.38 in Great Britain, 15.72 in Germany and 11.72 in France.

These railways are state property, and besides them there are 2,091 miles of light railways worked under the control of the National Society for Local Railways, administered by a council of members, two appointed by a council of four members, two appointed by the state and two elected by the shareholders. The state also appoints the chairman and general manager, and the shareholders elect a supervising committee of nine members (one from each province).

Though these light railways are partly state controlled, the employees are servants of the company, whereas service on the main railways is government work and ranks with the posts and telegraph as "civil service."

Drivers Refuse to Work for Germans

At the time of the invasion (August-September, 1914) the engine-drivers whenever possible took the engines into France. Many of their engines, not being immediately required there, were dismantled and sent to Russia where the transport crisis was most acute. Comparatively few mechanics, however, escaped in this way, and owing to the terrible congestion on the lines, by no means all the engines, so that the invader would have soon been able to use the lines and rolling stock left. The Belgian railwaymen, however, refused to carry on the service, and German employees had to be introduced, who, owing to their lack of experience, especially of the lines constructed on an inclined plane, were the cause of many accidents and the dislocation of urgent military transport.

After their failure to break through to Paris or Calais, and their defeats of the Marne, on the Yser and before Ypres, the Germans began to organize for a long war and to draw all fit men into essential services. As many Germans as were required for an army corps were employed on the Belgian railways, and, in order to free them for military service, the occupying government tried to persuade the Belgian railwaymen to return to work, pointing out to them that the railways were still of service to the civil population when not required by the military. The Germans offered an all-round increase of wages and specially high rates to drivers (at Liege £2 (\$10) per day was offered to drivers accustomed to the inclined plane of Haut Pré). All the railwaymen refused these offers, and resisted with the same courage when the Germans tried force instead of persuasion.

Bribery and Threats Useless

By the spring of 1915, after six months' vain attempts to bribe the railwaymen, finding the rolling stock badly in need of repair and being unable to spare mechanics to deal with it, Germany began her policy of force. At Luttre (where the great Belgian repair works are) a deputation of 30 workmen was called and formally offered 5s. to 7s. per day for ordinary workmen and £1 per day for drivers. They refused on behalf of all their comrades. They were then shut up in railway carriages and threatened with de-

*From the Railway Gazette (London).

TELEGRAPH DEPARTMENT RECORD OF TRAINGRAMS

Forwarded to Office 19....

Envelope No.	SYMBOL	TO	TRAIN	DATE	TIME	Envelope No.	SYMBOL	TO	TRAIN	DATE	TIME
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portation to Germany, where they would be obliged to work without payment. Their families were told the same thing, and asked to persuade them. Next day a large crowd gathered at the station, and when the train containing the still resolute workmen moved off it was loudly cheered, the prisoners replying with shouts of "Vive la Belgique." After all, the men were liberated at Namur.

Next, 100 men were collected in a canteen and harangued by a German officer, who promised them a certificate stating that they had only gone to work when forced to do so. "Let those who agree to work step forward," he ended. All the men stepped backward, shouting "Vive la Belgique, Hurrah for our soldiers." After the men, the master, M. Kessler, manager of the Luttre Railway workshop, was arrested and kept two days in prison. On April 12, 1915, he was sent under military escort to meet his men, who were also guarded and had each been served with a written threat of imprisonment in Germany if they refused to work. The German officer in charge ordered M. Kessler to persuade his men. He replied that both he and the foremen had taken the oath of allegiance to their King and could not do anything contrary to it. On being again urged and threatened, he consented to speak. He read aloud the German communication, adding: "I leave you to judge what your duty is." The men cheered and refused to work. M. Kessler and two of the staff men were imprisoned, 190 men were immediately sent to Germany, and 60 more were arrested on June 5.

Another typical instance took place at Malines the same month. Under pressure from the military the burgomaster placarded notices stating that the German authorities called upon the railwaymen to present themselves at the office of the German engineers in charge of the works. No one responded. The Germans then secured the names of the men, arrested them singly in their homes and escorted 500 of them to the works, where, on their refusal to work, they were incarcerated. Finding the men stubborn, the Germans penalized the town. No one was allowed to enter or leave it, and the population had all to be indoors by 6:30 p. m. Still the men would not give way, and eventually the Germans were obliged to raise the embargo without having achieved their object.

Railwaymen Deported

Throughout 1916 the administration in Belgium took every step calculated to increase unemployment, with a view to forcing the men, through distress, to work for Germany. The two main features of this policy were the requisitioning of raw materials and refusal to allow the communes to carry out public works on which they might have used the unemployed.

By the autumn there was an enormous number of unemployed, and the Germans made this an excuse for introducing forced labor. In October began the deportation to Germany of Belgian workmen, whereby, during a few months, between 150,000 and 200,000 men were enslaved. Some of the railwaymen from Nivelles were among the first victims. No discrimination was made between employed and unemployed. At Quaregnon, for instance, 1,000 men were called up and 304 chosen, of whom 227 were employed. After quoting this and 19 similar instances, the senators and deputies of the district of Mons, in a written protest to the German government, add, "Is this the effect of chance? No: generally the choice of men who have work in Belgium is deliberate. The recruiting officers seem to have a marked predilection for the most experienced workmen of certain industries; foremen, men from machine shops and rolling mills, glassmakers, shoemakers, fitters, electricians and farmers."

As regards the railwaymen, the Germans were really more anxious to use their services in Belgium than in Germany,

and instances of pressure brought to bear on them, and which amounted to a regular persecution, are too numerous to mention. At Tournai the railwaymen were condemned to four months' imprisonment for refusing to work on German engines. Finding them equally obdurate at the end of their sentence, it was in December increased to a year's imprisonment, during which time they were nearly dying of hunger. During 1916 in Brussels some mechanics were summoned to drive German trains, and were kept three weeks at Kommandantur, alternatively threatened and cajoled. Finding them still determined to give no assistance to the enemy, the Germans ordered the banks to cease any payments of money to their wives and families. The mechanics, still resolute, were deported to Germany, leaving their families either to live on charity or to starve.

Workshops and Plant Destroyed

In 1917 the occupying power increased its demands on the factories and workers of Belgium. It sequestered every workshop for which it could find the personnel, either by importing German or prisoner labor, or by bribing a few of the former workmen. But the majority of the factories could not be worked for lack of labor, and the Germans determined to get what use they could out of them, either by taking the machinery to Germany or smashing it up for shrapnel. At Thy-le-Chateau a lot of railway material, including the cast-iron pillars for the Nord-Midi junction in Brussels, a number of buffers, grease boxes, etc., were thus reduced to scrap iron. Some light railway material had been contracted for at Bruges before the war to the Argentine government, and was all seized.

At the same time they tore up many hundreds of miles of light railways in Belgium and seized the material and rolling stock belonging to the companies. It is supposed that the lines were relaid on the Western front. Rails were one of the main productions of the flourishing Belgian iron and steel factories, but most of the heavy machinery employed in their manufacture was removed to Germany or broken up.

The names are on record of 42 factories thus destroyed in 1917, among which are the railway shops at Malvourt, while others, chiefly in Hainaut, are mentioned in groups of 10 or 20. From this list it can plainly be seen how the owners and men of factories whose production might be useful to the enemy preferred to see their property destroyed or to suffer distress caused by unemployment rather than to put themselves under German guidance.

Railwaymen Resist to the End

Passive resistance in its various forms was still carried on in the occupied provinces during the earlier part of 1918. Life was hard everywhere, but especially in the zones immediately behind the front, which were under military rule, and where compulsory labor was enforced drastically on all who could in any way be useful to the armies.

Transport was, there especially, a vital question for the Germans, and no one with any knowledge relating to it was exempted from the trial of enslavement under threat of German machine guns, often within range of Allied shell fire. Even in this zone of horror patriotism still lived, and the railwaymen were not unworthy of their 10,000 comrades serving with the colors the other side of the Yser. In February, 1918, at Mouscron, a small town in West Flanders, two guards and a railway laborer were sentenced by a military court for "acts opposed to German interests." One of the guards was condemned to death and immediately executed, the two others were sentenced to 15 years' hard labor. In order to terrorize the population the town was placarded with their names and punishments. We may be grateful thus far to Germany for giving us their names to honor, Achille Debacker, executed; Henri Debavoy and Jules Leuridan, imprisoned.

Railroad Prospects Are Still Uncertain

Five-Year Plan Side-Track—President May Postpone Decision as to Relinquishment of Roads

WASHINGTON, D. C.

WITH FORMER DIRECTOR GENERAL McADOO's plan for a five-year extension of federal control finally side-tracked as far as this session of Congress is concerned and with the prospects for an extra session of the new Republican Congress still uncertain, the question as to the disposition of the railroads is still an unanswered one. There has been a strong expectation that President Wilson, who is spending this week in Washington, might reach some decision as to a future date for the relinquishment of the railroads before leaving next Wednesday on his return trip to the peace conference at Paris. It was also thought that he would decide on the question of an extra session of Congress which would afford an opportunity for the consideration of permanent railroad legislation, but it was announced on Tuesday that he had decided under no circumstances to call an extra session until after his second return from Europe, which may be as late as June, and it is said to be quite possible that no decision as to the relinquishment of the railroads will be reached during his present stay.

In his address to Congress in December the President said: "The only thing that is perfectly clear to me is that it is not fair either to the public or to the owners of the railroads to leave the question unanswered and that it will presently become my duty to relinquish control of the roads, even before the expiration of the statutory period, unless there should appear some clear prospect in the meantime of a legislative solution." If there is yet any clear prospect of a legislative solution it is by no means apparent to a casual observer and there are many in Washington who have believed that the roads would be returned as of June 30, but Director General Hines, who is expected to confer with the President on railroad matters before he leaves, although he has said the roads must be returned soon unless there is an extension, testified before the appropriations committee of the House that he doubted very much if there could be a relinquishment earlier than this fall.

The principal concern of the Railroad Administration at this time is to get the additional appropriation of \$750,000,000 for its revolving fund, which was passed by the House on Friday, February 21, and which is still pending in the Senate. Director General Hines and Secretary of the Treasury Glass appeared before the appropriations committee of the Senate on Tuesday, urging the necessity for the passage of the bill at this session in order that the administration may meet its obligations as they come due. The committee is expected to report the bill as a rider to the general deficiency appropriation bill which is one of the measures that must be passed before Congress can adjourn, and the President is using his influence to insure its passage.

The Senate Committee on Interstate Commerce concluded its hearings on Friday, February 21, and at an executive session on Tuesday of this week decided to make no recommendation to the Senate either as to the five-year plan or as to any permanent plan for the solution of the railroad problem. The House Committee on Interstate and Foreign Commerce had previously decided not even to hold hearings. The Senate committee did order a favorable report on Senator Cummins' bill, introduced immediately after the armistice was signed, to amend Section 10 of the federal control law. The purpose of the bill is to restore to the Interstate Commerce Commission its former authority over increases in rates by eliminating the provision which authorizes the President to initiate rates without suspension by the commission, but as the section now provides for a final review by the interstate com-

mission of all rates initiated by the President, it is believed that the amendment might also remove the ground on which the Railroad Administration has asserted its independence of the rate authority of the states.

The committee also reported favorably a bill introduced by Senator Poindexter of Washington, to amend the fourth section of the commerce act.

Senator Poindexter's bill, S. 313, proposes to amend the fourth section to make the long and short haul clause of the federal act absolute, that is, to prohibit the charging of a higher rate for a shorter distance than for a longer distance, eliminating the authority granted to the Interstate Commerce Commission in the present law to permit exceptions. The bill is, of course, directed against the practice of the railroads which has been permitted by the Interstate Commerce Commission of making lower rates to the Pacific coast terminals than to the intermediate points. The subcommittee to which the bill was referred had taken 700 pages of testimony, but the bill received only a few minutes' consideration by the full committee and it is recognized that it stands no chance of passage in the few remaining days of the present session. Its enactment would cause a revolution in the rate structure, upsetting the thousands of adjustments authorized by the commission in its fourth section relief orders. It would amend the present section to read:

"It shall be unlawful for any common carrier subject to the provisions of this act to charge or receive any greater compensation in the aggregate for the transportation of passengers, or of like kind of property, for a shorter than for a longer distance over the same line or route in the same direction, the shorter being included within the longer distance, or to charge any greater compensation as a through rate than the aggregate of the intermediate rates subject to the provisions of this act, but this shall not be construed as authorizing any common carrier within terms of this act to charge or receive as great compensation for a shorter as for a longer distance.

"Whenever a carrier by railroad shall, in competition with a water route or routes, reduce the rates on the carriage of any species of freight to or from competitive points, it shall not increase such rates unless after hearing, and an order granting permission therefor by the Interstate Commerce Commission.

"This act shall take effect 60 days after its approval by the President."

No action was taken on Senator Cummins' bill to prevent the President from relinquishing the railroads short of the 21 months period after the proclamation of peace unless authorized by Congress. The senator announced that he would press the measure on the floor of the Senate either as an independent measure or as an amendment to the \$750,000,000 appropriation bill.

After his hearing before the Senate appropriation committee Mr. Hines gave out the following:

"While the committee gave no indication of its attitude, I feel that I have succeeded in demonstrating to the committee the absolute necessity for the entire appropriation and its extraordinarily urgent character. The Railroad Administration needs practically the entire appropriation inside of the next 60 to 90 days to meet obligations which it assumed in the calendar year 1918, partly for rentals to the railroad companies and partly for equipment and other additions and betterments. The appropriating of this money at once will be

of immense value in clarifying the situation, enabling the government to pay without any delay whatever all its obligations as they fall due. This will greatly improve the financial situation of the railroad companies and of the equipment companies and therefore will have an important bearing on the financial conditions generally. It will also enable the Railroad Administration to go ahead without question on its conservative program of maintenance and improvements. I believe I made it clear to the Senate committee that this entire appropriation is really needed merely on account of capital temporarily tied up in the government's control of the railroads; and indeed that of the entire \$1,250,000,000 which will have been appropriated if this appropriation shall be granted, practically \$1,000,000,000 will be returned to the government as the railroad companies liquidate from time to time their indebtedness to the government. I believe that this process of liquidation will go forward with greater and greater rapidity. This fact of reimbursement of the government for nearly all the money appropriated for the railroads differentiates this appropriation from nearly all other appropriations made by the government. The fact that these moneys are largely due now and that the rest will become due so rapidly differentiates the appropriation from the ordinary supply bills which will not begin to be needed until July 1st next, and makes the appropriation a peculiarly urgent one."

Appropriation Bill Passed by House

The bill appropriating a \$750,000,000 addition to the revolving fund of the Railroad Administration was passed by the House on February 21 by a vote of 311 to 14, but not until after a strenuous effort had been made to tie a string to it by amendments to prevent the relinquishment of the roads by the President before Congress has had an opportunity to enact remedial regulatory legislation. An amendment offered by Representative Rayburn of Texas adding a proviso that the roads should not be returned until December 31, 1919, was defeated by a vote of 103 to 51, and a similar amendment by Representative Esch fixing the date as July 1, 1920, was defeated, 91 to 73. Another amendment, to limit the amount to \$381,000,000, was also lost. The debate, which covered five or six hours, brought out a storm of criticism of the government's handling of the railroads from the standpoint of expenses and service, and most of the representatives who spoke in favor of the bill took occasion to express their opposition to government ownership or continued government control beyond the time necessary for Congress to enact permanent legislation. The amendments were only defeated after strong appeals had been made to the Democrats by Chairman Sherley, of the appropriations committee, and to the Republicans by Representative Cannon, a member of the committee, to disregard collateral issues and grant the appropriation necessary to enable the Administration to discharge its contract obligations. Many of the speakers indicated their disinclination to vote for the bill except for the necessity for paying the amounts owed by the Railroad Administration to the railroad companies and to the car and locomotive companies for the equipment ordered. Many added the amount of the two appropriations, \$1,250,000,000, to the amount of the increase in freight and passenger rates as representing the cost of a year's experiment with government operation, in spite of the promises that most of the appropriation represented temporary advances to be repaid to the government.

Representative Fess of Ohio and Dyer of Missouri said that members of Congress were being bombarded with letters from railroad employees urging them to vote for government ownership or operation, and Representative Dyer read a letter which he and others had received reminding them that they had been elected by the votes of railroad employees and saying that if they wished to remain in office

they should vote for the continuation of government control. This letter bore a notation "carbon copy to John Scott, A. F. of L. Building, Washington, D. C.," and, Mr. Dyer said, indicated that the propaganda was organized at Washington.

Chairman Sherley, of the committee, in urging the appropriation, said he was unalterably opposed to government ownership and in favor of turning back the roads at the earliest possible date, but that the question of government ownership is not involved in meeting the condition with which the Railroad Administration is faced.

While Mr. Cannon was speaking for the bill, Mr. Juul asked if the two appropriations represent the entire cost to the nation for its first year's experiment in railroad management, or if there were more that Congress had not been informed about. Mr. Cannon replied that he was neither a prophet nor a son of a prophet. Mr. Denison wanted to know if the appropriation can be used in any way as an argument for continued government operation.

"On the contrary, I think the bill itself, connected with all that has been done, is a very strong argument against government ownership," replied Mr. Cannon. While Mr. Cannon urged the appropriation, he said that unnecessary expenditures had been made "in hiring people to be good."

Mr. Rayburn in advocating his amendment said: "This lesson in government operation has been a costly one and a bitter one, but I believe we will be at least partially compensated for all the money that we will lose by an actual demonstration of the heresy of the whole idea of government ownership. I believe that it is the death knell, at least for a generation, of government ownership of the railroads." He thought, however, that the roads ought to be retained at least until Congress has had an opportunity to enact remedial legislation.

Representative Esch thought a little longer period ought to be provided because of the uncertainty as to whether there will be an extra session.

Senate Committee Hearings

The Senate Committee hearings on proposed railway legislation begun on January 3 were concluded on Friday, February 21.

S. H. Cowan, representing the Texas cattle raisers, testified on February 20, strongly urging legislation at this session to restore the legal remedies of the shippers such as the commission's power to suspend rates. "If Congress is asleep at the switch," he said, "the only course left to the public is an appeal to their public-spirited representatives in the Railroad Administration." Mr. Cowan vigorously opposed both government ownership and continued government operation and demanded that Congress put a stop to the "saturnalia of useless expense." He filed a statement entitled "What Shall We Do to Be Saved?" "The people are tired of having their rights relegated to Washington for some man to determine," he said. "This ought to be a government of law and before it adjourns Congress ought to restore the remedies of the law. Now the shipper has rights only by the grace of the Railroad Administration. The farmers and the shippers generally want the roads turned back to their owners and they want this business of government operation ended just as soon as it is practicable to do so."

"They talk about their economies of unified control. There have been no such economies. There has been a veritable riot of extravagance. They have given wage increases and back pay to men who, knowing they were not entitled to them, have donated their pay back to the Red Cross. The power to initiate rates and to get appropriations simply invites inefficiency and extravagance, but there is a limit to the amount of increased rates the traffic can stand and the roads ought to be put back in the hands of the men who

know how to get economical operation." Mr. Cowan declared that the loss and damage to perishable freight during the past year has exceeded the amount of the rates paid on that class of traffic.

On February 21 Thomas C. Atkeson, representing the National Grange, which he said included 1,000,000 farmers, presented a statement and resolutions supporting the Cummins bill to prevent the President from turning back the roads until Congress has had an opportunity to legislate. He said that he had never been very strong for government ownership, but had been converted against it during the past year and thought that the majority of the farmers do not favor government ownership. "There are some who do," he said, "but there are fewer of them now than 18 months ago because the government's handling of the roads had not been satisfactory."

A. M. Todd, president of the Public Ownership League, objected when the committee limited him to 10 minutes because he said 90 per cent of the time of the hearings had been taken up by opponents of government ownership. He spent most of his 10 minutes in displaying photographs of expensive tunnels, passenger stations, etc., on the Swiss government railways and filed his prepared statement. The photographs, he said, were to show that the Swiss railways cost five times as much as American railways to build, yet, he said, their rates were lower. To prove this he showed

a season ticket on which he had ridden for 45 days for \$27. Senator Robinson said he thought that was a discrimination against the ordinary passenger, who, Mr. Todd said, paid 3.1 cents per mile, because the season ticket rate must be below the cost of service and he thought that represented a poor argument for government ownership.

Theodore Prince, of New York, a financial writer, outlined a plan for the creation of a finance corporation, with a capital stock of about \$500,000,000 to be subscribed by the railroads, to assist in financing the weaker roads, to handle co-operative improvements, and to finance the debts of the railroads to the government at the end of federal control. He also had a plan of railway regulation.

T. H. Condon, vice-president of the American Federation of Railroad Workers, advocated a continuation of government control or government ownership, because, he said, if the railroads were restored to their owners wages might be reduced.

Thomas F. Blunt, a "private citizen," of Washington, D. C., presented "a 14-point plan" for the ownership, operation and control of the railroads under a government guarantee.

The committee decided to receive briefs from Luther M. Walter, general counsel for the National Association of Owners of Railroad Securities, Bruce V. Crandall and Benjamin Catchings.

Doings of the United States Railroad Administration

Director General and Short Line Association Reach Agreement for Revised Short Line Contracts

WASHINGTON, D. C.

DIRECTOR GENERAL HINES and a committee of the American Short Line Railroad Association have reached an agreement on a revised form of contract to be executed by short line railroads which are not being operated by the federal government as an amendment to the form approved by the director general on October 30 which has been the subject of protracted negotiations as to the interpretation of some of its features. W. M. Blount, assistant to the president of the short line association, has devoted several months to the special work of inducing the Railroad Administration to stop diversions of traffic from the short lines and to make reparation for the traffic that has been diverted and Mr. Hines announced on February 26 that he had approved two standard forms of co-operative short line contracts which are satisfactory to the short line association. The two forms are the same, except that the first covers roads having no competitive traffic and the second covers roads having competitive traffic. In this a clause has been added providing for reparation for diversions of competitive traffic from the short lines between April 1 and November 1, 1918, and for giving to the short lines subsequent to November 1, 1918, the same proportion of competitive traffic as they had in the years 1915, 1916 and 1917. This makes the effective date of the contracts April 1, 1918, a question which has been somewhat in dispute after the approval of the previous form.

The contracts provide:

- (1) That all joint rates shall be fairly divided between the director general and the company.
- (2) That the short lines shall receive an equitable allotment of cars.
- (3) That short lines having a length of 100 miles or less shall be allowed two days' free time for cars owned by a road under federal control and used by the short lines.
- (4) That the short lines shall have the right to use the

purchasing agencies of the director general in the purchase of materials and supplies and shall have repairs done in the shops of the director general upon the same terms as were enjoyed before federal control.

(5) That in the publication of tariffs and routing, the short lines shall be treated in the same manner as roads under federal control.

(6) That if in the opinion of the director general, it becomes necessary for him to operate the short-line railroad, he shall have the right to do so upon the payment of compensation as provided by the federal control act.

For the purpose of finally removing the impression which the short line representatives stated to exist widely over the country, that the Railroad Administration was unfriendly to the short lines, the director general announced that he would make appropriate arrangements to make certain that all officers and employees of federally controlled railroads give fair, just and friendly consideration to questions affecting the short lines which may come up for consideration in connection with the application of the contracts.

Edward Chambers, director of the Division of Traffic, has written a letter to Mr. Blount, requesting the members of the short line association to prepare claims for the diversion of traffic upon blanks to be supplied by the administration and place the claims through the office of the association so that they may be analyzed and prepared in accordance with the direction of the association. This will avoid extra handling and permit of the preparation of the claims in proper form while the execution of the contract is receiving attention. The matter of per diem will be handled by the Division of Operation, which will provide proper forms upon which claims should be presented and will be prepared to handle the matter with reasonable promptness when contracts are executed.

In a letter to Bird M. Robinson, president of the Amer-

ican Short Line Railroad Association, Director General Hines expressed gratification that a complete agreement has been reached on the form of contract to be executed. He also stated that the short line railroads which sign the contract secure all the advantages of railroads which are under federal control, including increases in rates and freedom from levy of attachment on their property. In addition, they will secure the specific advantages as to reimbursement for diverted traffic, two days' free time, and otherwise, specified in the contract. Short line railroads which do not sign the contract, of course, will not receive these advantages and while it will be the policy of the Railroad Administration to deal justly and fairly with non-signatory as well as signatory railroads, Mr. Hines said, those who do not sign the contract but who accept the special advantages of two days' free time and reimbursements for traffic diversions in accordance with the terms of the contract will do so with the understanding that they waive all claims against the government and will execute appropriate papers.

The representatives of the short lines had also called attention to the fact that the Railroad Administration has not heretofore rendered financial assistance to short lines and that they contemplated asking Congress when considering the appropriation of an additional \$750,000,000 for the Railroad Administration, to provide express authority for the Railroad Administration to use \$50,000,000 of the amount, in its discretion, in making advances to meritorious short line railroads. Mr. Hines said in his letter that careful estimates indicated that \$750,000,000 as a minimum and probably more would be needed to carry through the year 1919 the various capital expenditures, advances to corporations and working cash capital, which must be carried in respect of the railroads which the government is directly operating. He, therefore, hoped that any such request would be coupled with a request for a corresponding addition to the appropriation. In transmitting a copy of Mr. Hines' letter to the members of the association and other interested short lines, however, Mr. Robinson advised that after conference with the director general it had been decided to withdraw the request that Congress set aside a part of the fund for the benefit of the short lines because the director general has advised that he will advance out of the \$750,000,000 to any meritorious short line having the short line contract, any funds that he would advance to such a line in the event a part of the fund was set aside especially for that purpose.

Mr. Robinson said to the short lines that he was convinced that the majority, if not practically all, of the short line railroads should definitely secure their legal rights by entering into a contract with the government and he recommended that this be done. He said the director general's letter was most gratifying as a definite recognition of the status of the short line railroads and of the work done for such roads by the association.

Relations with State Commissions

The Railroad Administration and the state railroad commissioners have agreed to disagree as to the jurisdiction over intrastate rates during the period of federal control, and efforts will be made to expedite a test case so that the question may be passed upon by the Supreme Court. As to matters pertaining to service an understanding was reached at a conference last week between Director General Hines and Max Thelen and E. C. Niles, of the Division of Public Service, and the executive and special war committees of the National Association of Railway and Utilities Commissioners by which the authority of the state commissions is restored to a large extent. The terms of the understanding as to all matters except rates were reported in last week's issue. The rate subject was taken up on the second day of the conference, on February 20, and Mr. Hines insisted that the federal control act does not preserve the jurisdiction of the states. Fol-

lowing the conference he issued the following General Order No. 58, providing that:

"In order to clarify the relationship between the United States Railroad Administration and the state railroad and public service commissions, all officers and employees of the United States Railroad Administration shall be governed by the policies and regulations herein set forth, as follows:

"1. Transportation systems under federal control continue subject to the lawful police regulations of the several states which were and are applicable to privately operated transportation systems, in such matters as spur tracks, railroad crossings, safety appliances, track connections, train service, the establishment, maintenance and sanitation of station facilities, the investigation of accidents, and all other matters of local service, safety and equipment. It will be the policy of the director general to cause the orders of the state commissions in these matters to be carried out.

"2. In all proceedings of the character specified in paragraph 1 hereof, formal or informal, officers and employees of the United States Railroad Administration shall recognize the jurisdiction of the state commissions and shall assist them in developing the facts and in applying such remedy as may be necessary and shall fully co-operate with them.

"3. In all formal proceedings of the character specified in paragraph 1 hereof, to which the director general may be a party, he will consider service as having been made on him if made on the federal manager or general manager, as the case may be, of the transportation system affected, or on such official as the federal manager or general manager, respectively, shall designate and whose name he shall file with the state commission for that purpose. The federal manager, or if none, the general manager, shall designate to each state commission an officer conveniently located on whom such service may be made. The legal officers of the United States Railroad Administration are directed to appear in such proceedings and to present fully the facts.

"4. The federal control act empowers the President to initiate rates, fares, charges, classifications, regulations and practices by filing the same with the Interstate Commission, and empowers said commission to review the justness and reasonableness thereof. The state commissions take the position that the intrastate rates are nevertheless subject to their jurisdiction and it will be the policy of the director general to expedite in every way a final decision by the appropriate tribunal of the question thus raised.

"5. The directors of traffic and public service of the United States Railroad Administration are directed, before authorizing advances of any importance in rates, fares or charges either interstate or state, to submit the same to the state commissions in the states affected for their advice and suggestions.

"6. It is important that the records of the state commissions be continued intact. Transportation systems under federal control shall file with the state commissions, for information, all their rate schedules heretofore or hereafter issued during the period of federal control, and annual and other reports and information as to matters within the scope of federal control requested by state commissions according to the provisions of state statutes.

"7. All officers, agents and employees of the United States Railroad Administration are directed to supply information and render assistance as requested by state commissions, in accordance with the provisions of this order.

"8. This order shall be effective on and after its date."

Barges Ordered for New York Canal

The Railroad Administration has let contracts for 20 steel self-propelled barges for service on the New York Barge Canal, to be delivered in four months. They will be of 400 h. p., and will each haul 75 tow barges.

Taxation of Railway Materials

A difference of opinion has arisen between the federal managements of the railroads and the state authorities of Indiana regarding the taxation of railway materials and supplies. A. H. Smith, Eastern regional director, issued a circular last November to federal and general managers asking them to call the attention of their tax representatives to the fact that material and supplies on hand are the property of the United States government and therefore not subject to taxation. The circular stated that where tax reports heretofore have been prepared listing such items the notation "none subject to tax" should be inserted, with any further explanation deemed necessary. The state board of tax commissioners referred the matter to the attorney general of the state, who has recently given an opinion that all property which under private control would have been exposed to taxation should be regarded as subject to taxation under federal control. This was based on the statement that "the active operation of the railway systems was left in the hands of the organizations which existed and had control thereof" before the period of federal control. The opinion also stated, however, that property "not in the possession of a given railway system for its use but merely moving in due course for use of some other system would not properly be assessed to the company so possessing said property at the taxing period" and it is understood that the position taken by the Railroad Administration that the materials and supplies taken over by the government are government property was based on the fact that such materials have been pooled and are being used in common so that the location of certain supplies on one road temporarily does not make them the property of that road. State officials and many of the federal government officials have been slow to recognize the fact that the railroads are not being operated by their former organizations but as a single system by the government. The assessing officers in Indiana have been referred to the attorney general's opinion and instructed to list this property as formerly with a possibility of correction at a later date.

Coastwise Steamship Situation

Appreciating the conveniences furnished in the past to various communities by coastwise steamship lines, the Railroad Administration, for some time past, has been seeking means of protecting this service.

On April 12, 1918, the President took over the boats and other property of the Clyde Steamship Company, the Mallory Steamship Company, the Southern Steamship Company, and the Merchants and Miners Transportation Company, placing them under the direction of the director general of railroads. Such action appeared necessary in view of the fact that during the stress of war requirements these coastwise steamship lines were needed to relieve congestion on rail lines then under federal control and because there appeared to be danger that at least some of the ships in this service would be transferred by their owners to trans-Atlantic service. Following the signing of the armistice it was decided that the maintenance of these lines under federal control was no longer necessary, and therefore Director General McAdoo issued an order on December 5 releasing them. Assurances having been repeatedly given those lines by the Railroad Administration of liberal treatment in the division of traffic and in the division of joint rates, the Clyde Steamship Company, the Mallory Steamship Company and the Southern Steamship Company, accepted this relinquishment and are maintaining service except on a few routes where the combination of light business and high operating expenses have caused temporary suspension pending the return to normal tonnage movement.

One element operating for the benefit of the coastwise steamship lines has been the cancellation of permit require-

ments which were necessary during the war in the shipment of coastwise freight through ports handling overseas traffic. The permit requirements have been cancelled on account of relief of congestion at North Atlantic ports.

As a further aid to restoring normal conditions, announcement was made by the director general on February 17 that very careful consideration was being given to a revision of the war policy of the Railroad Administration as to differential freight rates on rail and water routes. Differential rates via rail and water routes between the Eastern states and the South and Southeast were not withdrawn during the war period and are still in full force. Because of the return to peace conditions differential rates via rail and water between New England and Central Freight Association territory, Southeastern—Mississippi Valley territory, the West and Southwest, are now being considered and some change in this situation should become effective during the month of March. Some time is necessary to work out details of this contemplated readjustment.

The Merchants and Miners Transportation Company, however, has not so far accepted the relinquishment. In order not to inconvenience the communities served by this company, the Railroad Administration as a temporary measure has been operating the ships since December 5 for the account of the company. But it has been decided to deliver the boats of this company definitely to it at various home ports on March 1. There have been intimations that the Merchants and Miners Transportation Company is giving consideration to the discontinuing of its service, but it is announced, the Railroad Administration will do everything reasonably in its power to facilitate and encourage the continuance of the service by the company.

Automatic Train Control Committee to Inspect Devices

The Committee on Automatic Train Control is planning a trip to begin some time next month for the purpose of examining the operation of automatic train control devices which are now in service. At its meeting in Washington this week the committee expects to dispose of a considerable number of devices which will not meet the requirements, after which it will be free to devote more attention to those which have already demonstrated their practicability. The western trip will include an inspection of the operation of the automatic train control systems on the Chicago & Eastern Illinois between Chicago and Danville, on the lines of the Washington Water Power Company near Spokane, Wash., on the Key Route, out of San Francisco, and on the Western Pacific. Later the committee will visit installations in the east, including that on the Chesapeake & Ohio and one or two in New England.

Post Office May Object to Handling of Railroad Business Mail

The postoffice department may contest the legality of the orders recently issued by the Railroad Administration through the regional directors providing for the carriage of railroad business mail without payment of postage via lines under federal control. Under the laws giving the postoffice department a monopoly in the handling of mail railroads have been allowed to handle as railroad mail matter to or from connecting lines, that is mail in which each carrier has an interest, but have not been allowed to route such mail over an intermediate carrier. The question whether the railroads under federal control came within this limitation came up last year and in August W. H. Lamar, solicitor for the postoffice department, gave an opinion to the second assistant postmaster general that it cannot be assumed that it was the intention of Congress to relieve railways of expense for postage. The federal control law, he held, has not changed the status of the railroads as regarding their legal entity and therefore where it would have been a violation for a railroad

to carry mail prior to the passage of the control act such procedure at this time would still constitute a violation of the law. Since then John Barton Payne, general counsel for the Railroad Administration, has given an opinion that the railroads under federal control are one system and that therefore there are no intermediate carriers among the roads in the federal system. As has recently been noted in our columns the regional directors have given instructions for the handling of railroad mail provided it is not routed over a line not under federal control and while the postoffice department has as yet made no protest it is said to be considering the matter. In case of a difference the matter would naturally be referred to the attorney general for a decision. The action of the Railroad Administration will cause a considerable reduction in the revenues of the postoffice.

Accounting Circular No. 74

Army regulations forbid the payment of transportation charges on a shipment covered by a government bill of lading when a part or all of the shipment has been lost or damaged, until such loss or damage has been adjusted. In order to avoid delay in settlement of accounts for transportation of War Department material and supplies, the following plan will be made effective immediately, according to Accounting Circular No. 74:

The transportation and telegraph section, quartermaster branch, central disbursing division, office of director of finance, is authorized by the Railroad Administration to deduct the amount of any claim for loss or damage from the freight charges due in connection with a bill of lading covering the shipment, a part or all of which has been lost or damaged. Under this arrangement, however, no deduction will be permitted from transportation charges due on other shipments.

When payment is made by the quartermaster's department there will be forwarded a statement explaining the deductions, and a claim will be presented for investigation by the carrier. If such investigation develops no liability on the part of the carrier supplemental bill for the amount deducted in previous settlement will be paid.

The War Department in presenting claim will give all available data regarding the loss and damage in lieu of forms and documents required by paragraph 2 of General Order No. 41.

This plan supersedes any arrangements which may have been entered into by individual carriers.

Government Still Entitled to Land Grant Rates

Federal control of the railroads has brought up many interesting questions as to the relation between the railroads as a government institution and the regular government de-

partments. Acting on an opinion by Judge Payne the Railroad Administration took the position that railroads under federal operation were not bound by the provisions of the land grants to certain railway companies which require them to give reduced rates on government business. With the large volume of government traffic moving during the war period this would have meant a considerable increase in the revenues of the railroads. The controller of the treasury, however, took the opposite position and declined to approve the payment of the freight bills on the basis of regular rates and as there is practically no appeal from his rulings the matter was dropped.

Contracts Signed

The Railroad Administration has executed a compensation contract with the Southern Pacific, providing for the annual payment of \$47,959,898. The contract covers the following subsidiaries: Arizona Eastern; Houston & Texas Central; Galveston, Harrisburg & San Antonio; Houston East & West Texas; Houston & Shreveport; Morgan's Louisiana & Texas Railroad & Steamship Company; Louisiana Western; Lake Charles & Northern; Iberia & Vermillion, and Texas & New Orleans. A compensation contract with the Chicago River & Indiana providing for an annual compensation of \$108,525 has also been executed.

The Export Situation

Commercial exports continue to show an increase at North Atlantic and Gulf ports, while South Atlantic ports show a slight decrease, according to a report from the Exports Control Committee for the week ended February 18. Total export commercial freight on hand was 259,520 tons as compared with 241,160 tons the previous week. The average number of cars handled at New York per day February 1 to 18 was 381 cars as against 253 for January.

The report states that there are 9,640 cars of food for export on hand, exclusive of bulk grain, at the North Atlantic ports. It is announced that the grain exchanges at Boston, New York, Philadelphia and Baltimore have been notified that applications may now be filed with the Grain Corporation for permits for the shipment of grain and grain products by the various dealers on account of sales made directly by them for foreign markets. In this connection the report states that there is due at Hampton Roads between now and March 5 on account of the Wheat Export Company a total of 51,000 tons of vessel space which will be distributed among the North Atlantic ports. There is a total of approximately 40,000,000 bushels of grain for the food administration and the Wheat Export Company which it is expected will be forwarded prior to April 1.



U. S. R. A. Standard Heavy 2-10-2 Type Locomotive

A description of this locomotive was published in the *Railway Age* of February 14, page 389

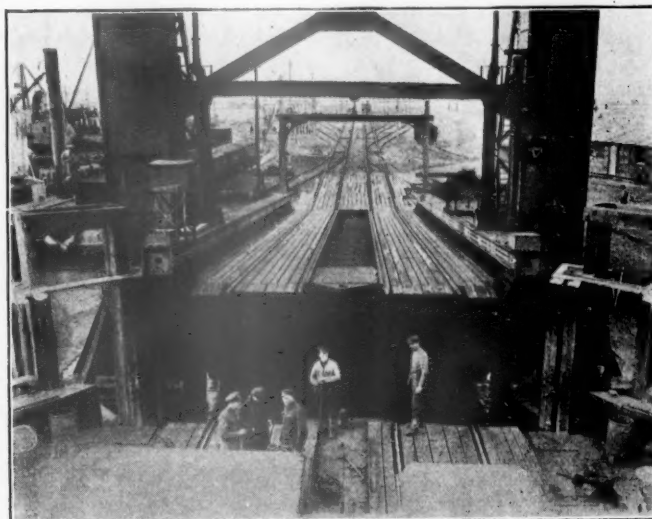
The English Channel Train Ferry

THE CHANNEL TRAIN FERRY is one of the interesting developments in transportation brought out by the war. It was instituted in 1917 to meet the demands of the British military authorities and plies between certain French ports and the newly created Port of Richborough, on the River

Stour, near Sandwich, in Kent. The rise of Richborough as a great forwarding depot is one of the romances of the war. Its creation as a port and the institution of the cross-channel barge and ferry services for the conveyance of military requisites has played a very important part in the



Freight Cars on Board the Boat

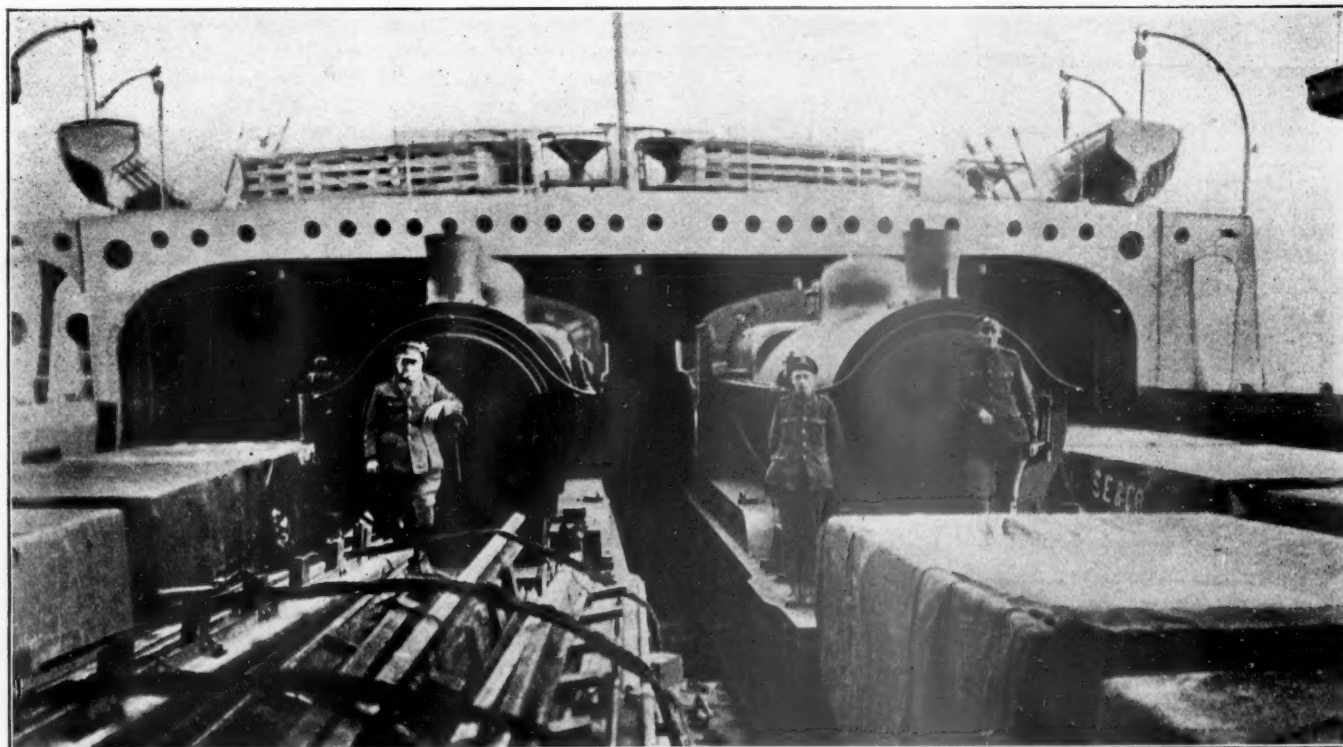


The Weigh Bridge at Richborough

of the French canal system to depots established at no great distance from the firing line. The train ferry came into existence in January, 1917, the French ports of Calais and Dunkirk being equipped with terminal facilities corresponding to those at Rich-

borough. The steamers employed are 363 ft. 6 in. long and 61 ft. 6 in. broad and their draft, when loaded, is 9 ft. forward and 10 ft. aft. They have a speed of 12 knots and displace 3,654 tons. The average load carried is about 900

conduct of the campaign on the western front. Wharf construction on the Stour was begun in June, 1916, and so well did it progress that by December a regular service of barges was in full operation. From first to last upwards of 4,000



Two Locomotives With Their Loads in the "Well"

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tons, and up to the end of the week ending October 23 the tons (deadweight) imported amounted to 58,981. Large numbers of railway trucks, brake vans, locomotives, tanks, etc., were carried across, the work of loading having proceeded with the utmost smoothness, the engines being taken over on their own wheels and the tanks on the special railway trucks on which they had traveled from the works. By this means an immense saving was effected in time, labor and expense, and there is no doubt that the ferry—to quote the words of one of the many correspondents who have lately written about it—"added enormously to our facilities for quick transport during critical months of the present year in France, and it will probably continue to render valuable service in the coming demobilization."

The Industrial Board of the Department of Commerce

THE INDUSTRIAL BOARD of the Department of Commerce is the official name of the organization being formed under the direction of Secretary Redfield of the Department of Commerce, with the approval of the President, "to put into direct effect a program for the readjustment of prices for basic materials," to meet post-war conditions in the hope that this will result in the stimulation of industry. The board is to be composed of representative men from industry, labor and the government who are being selected under the chairmanship of George N. Peek, formerly vice-chairman of the War Industries Board. It is understood that Hugh Frayne, who represented labor on the War Industries Board, also will represent it on the new board and that T. C. Powell, director of the Division of Capital Expenditures of the Railroad Administration, will also be a member.

Secretary Redfield has given out a statement regarding the conditions to be met and the purpose of the committee, in which he says:

"It will be the endeavor of the board to act promptly by consulting and interchanging views with these representatives of industry in the fullest and freest manner possible, with a view to aiding and assisting industry in general to resume activities to the fullest practicable extent. The immediate object is to bring about such reduced prices as will bring the buying power of the government itself, including the railroads, telephones and telegraph, into action and make it possible for the government to state that it is willing to be a buyer for its needs at the reduced prices. If these conferences result in such an understanding on the part of the government with respect to the important basic industries concerning proper prices and bases for prices at which purchases may be made by it, and these are approved by the board, it is believed that upon announcement thereof to the country in general the public will feel justified in promptly beginning a program of extensive buying.

"Such a procedure will in substance establish immediately a basis upon which to resume activities, and in this way the law of supply and demand will be enabled to come into play and from that time forward it will control the changes and readjustments in selling prices of materials and the trend of prices, it is believed, will be upward and not downward."

Secretary Redfield also says it is felt that the proper basis of selling prices will be found to be upon a scale higher than those of the pre-war days, but on the lowest plane possible, having due regard for industry, labor and government, in an effort to wholly eliminate the abnormal unbalanced stimulation that business has had and the inflated prices that have resulted and to start anew upon a normal level.

Train Accidents in January¹

THE FOLLOWING is a list of the most notable train accidents that occurred on the railways of the United States in the month of January, 1919:

Collisions						
Date	Road	Place	Kind of accident	Kind of train	Killed	Inj'd
7	Texas & Pacific.....	Texarkana	xc	P. & F.	1	1
†12	New York Central....	South Byron	rc	P. & P.	22	20
†13	Phila. & Reading.....	Ft. Washington	rc	P. & P.	14	30
18	Pennsylvania	W. Philadelphia	rc	P. & F.	1	4
†20	Chicago & N. W.....	Irving Park	rc	P. & F.	2	12
Derailments						
Date	Road	Place	Cause of derailment	Kind of train	Killed	Inj'd
7	Southern	Melrose, N. C.	runaway	F	1	2
7	Ches. & Ohio.....	Hardware	b. rail	F	2	0
25	Seaboard A. L.....	Mooresboro	.....	F	0	1
*31	Chi. & Alton.....	Fulton	.....	P	0	18

The trains in collision at Texarkana, Tex., on the 7th were a through passenger train, switching at the station, and a freight engine which had become uncontrollable and had run some distance unattended, and collided with the passenger train. One fireman was killed and one engineman injured.

The trains involved in the rear collision at South Byron, N. Y., on the 12th were westbound passenger No. 17, second section, and westbound passenger No. 11, which struck No. 17, which was at rest, at full speed. The rear car of No. 17 was crushed, and the car next ahead of it was wrecked; 22 passengers were killed and 20 or more injured. Train No. 11 had run past automatic distant and home block signals set against it; and also had disregarded a flagman's red light. This accident was reported in the *Railway Age* of January 17.

The trains in collision at Fort Washington, Pa., on the evening of the 13th were northbound local passenger train No. 381 and northbound express No. 319, the express running into the rear of the local, which had been stopped because of a freight train, delayed, ahead of it. Fourteen passengers were killed and 30 injured. Train 319 had run past distant and home automatic block signals set against it; also had disregarded the red light of a flagman who was back 1,500 feet. The engineman of No. 319 had had two nights' rest since his last trip, and had been on duty only three hours.

The trains in collision at West Philadelphia, Pa., on the 18th were an eastbound freight train, consisting of fourteen cars of coal, a caboose and two locomotives, the locomotives at the rear, and a following passenger train, No. 20. The freight had become stalled in the tunnel beneath the southbound tracks of the New York Division. The caboose, three locomotives and one baggage car were damaged. The flagman of the freight, who was in the caboose, was fatally injured, and three passengers and one employee on the passenger train were less severely hurt.

The trains in collision near Irving Park, Ill., on the morning of the 20th were a northbound passenger, carrying sailors and workmen to the Great Lakes Naval Training Station, and a following train of empty coaches. There was a dense fog at the time. One sailor and one brakeman were killed, and twelve passengers were injured. The empty train had run past distant and home automatic block signals set against it.

¹Abbreviations and marks used in Accident List:
rc, Rear collision—bc, Butting collision—xc, Other collisions—b, Broken—d, Defective—unf, Unforeseen obstruction—unx, Unexplained—derail, Open derailing switch—ms, Misplaced switch—acc, obst, Accidental obstruction—malice, Malicious obstruction of track, etc.—boiler, Explosion of locomotive on road—fire, Cars burned while running—P, or Pass, Passenger train—F, or Ft., Freight train (including empty engines, work trains, etc.)—Asterisk, Wreck wholly or partly destroyed by fire—Dagger, One or more passengers killed.

The train derailed near Melrose, N. C., on the morning of the 7th about 4 o'clock was a freight train of 22 cars descending Salute Mountain. The train became uncontrollable soon after passing the summit, and the engine and five cars were thrown off the track at safety track No. 2, the engine being overturned. One trainman was killed and two were injured.

The train derailed near Hardware, Va., on the night of the 7th was an eastbound freight. The engine was thrown off the track by the breaking of a rail, and, with eight cars, fell down a bank. The engineman and fireman were killed. The rail had been weakened by a transverse fissure.

The train derailed near Mooresboro, N. C., on the 25th was an eastbound freight. The tender of the locomotive ran off the track while crossing a trestle, and, with nineteen cars of coal, fell into Sand Creek. The engineman was injured.

The train derailed near Fulton, Mo., on the 31st was a southbound combined passenger and freight. Eighteen passengers were injured. The cause of the derailment was a defective truck.

Electric Car Accidents.—Near Strasburg, Ohio, on the 10th an interurban car was derailed at a bridge and plunged 20 ft. to the creek below; of the 25 persons in the car nearly all were injured. On the Third Avenue Elevated, New York City, on the 30th, a rear collision of passenger trains resulted in the death of one passenger and the injury of 20 or more.

New Type of Ditcher Effects Economies

SOME DATA COMPILED RECENTLY on the results secured by several railroads in using power ditchers to clean out cuts, remove slides and do miscellaneous excavating, clearly demonstrate the advantages of this type of equipment over hand methods. In the cases cited the machines were the Erie power ditchers, manufactured by the Ball Engine Company, Erie, Pa. These machines differ from other types



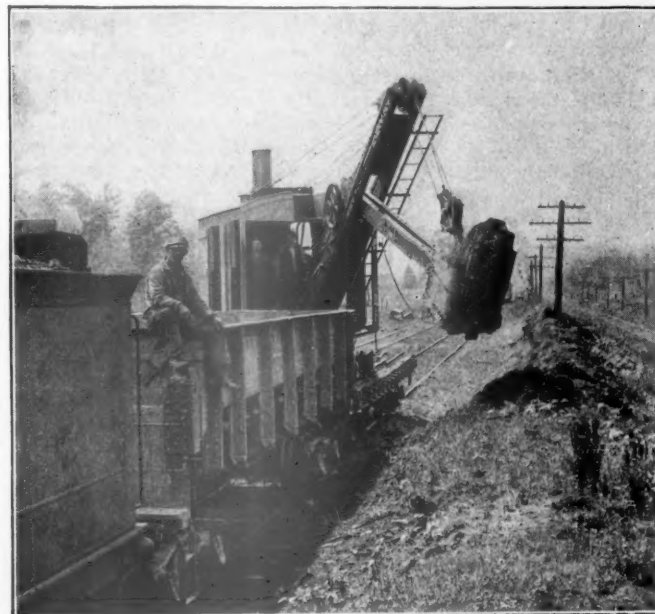
Operating a Ditcher Between Dump Cars

in common use in that the dipper handle is attached to the boom in the same manner as on the ordinary steam shovel; that is, it may be advanced or withdrawn through the boom with the aid of crowding engines mounted on the latter. No crane is employed, however, since the three engines provided for the separate functions of hoisting, crowding and

swinging are controlled by three levers and a foot brake which are handled readily by one man. The boom is 19 ft. 6 in. long and the dipper handle 16 ft. long, thus affording a maximum reach from the center line of the dipper to the center line of the occupied track of 28 ft. 6 in., or enough to permit the wasting of material beyond an adjoining track. These machines are used according to the usual plan, with the ditcher mounted on a flat car placed between two dump cars.

On the Chicago, Burlington & Quincy ditching machines of this type cleaned up side ditches in light cuts, loading four 20 cu. yd. cars about half full of material per hour. On one division a machine averaged 560 cu. yd. per 10-hr. day. In similar work on the Renovo division of the Pennsylvania Railroad one machine loaded 10 60-cu. yd. hopper cars in a 12-hr. day. Eight of these machines were used on the Pennsylvania Railroad last season.

Some information was also obtained from the Pennsylvania Railroad on cleaning up slides. One maintenance officer estimated that the machine was equivalent to 50 men, and would do the work in one-third the time. In one place a slide was cleaned up in 1½ days at a cost of \$20 for labor,



Ditching on the Pennsylvania Railroad

coal, interest and depreciation, while experience in a similar location with hand labor indicated that it would have taken 20 men at least six days to accomplish the same results. At the rate of pay then prevailing, \$2.40 per day, this would have amounted to \$288.

On the Canadian Pacific in the province of Quebec the use of one of these machines for excavating a depressed ash pit illustrates how they may be adapted to such miscellaneous work. In this case, the machine was mounted on a flat car as in ordinary ditching. The excavation was carried to a depth of about 12 ft. below the surface, the material being loaded on cars spotted on a track alongside on the original surface. The average performance under this arrangement was 90 to 100 cu. yd. of material per hour.

A special feature sometimes provided with these ditchers is an automatic crowding device which may be applied to the boom, and has the effect of limiting the position of the dipper teeth to a certain fixed level. By this means the bottom of the excavation can be maintained automatically at a certain depth below or above the level of the track occupied by the ditcher.

General News Department

The Chamber of Commerce, of Cincinnati, Ohio, by a vote of 1,130 of its members, has gone on record as opposing government ownership of railroads, the vote being 1,030 to 100.

An appropriation of \$2,500,000 for continuing the valuation work of the Interstate Commerce Commission is included in the sundry civil appropriation bill now before Congress. Last year's appropriation was \$3,500,000.

The Senate on February 22 passed a resolution extending until July 1, 1920, the effective date of Section 10 of the Clayton act, except that the section will become effective on March 1, 1919, as to any corporations hereafter organized.

Traveling railroad auditors, to the number of 141, met in Cincinnati on February 23 to prepare a program for beginning negotiations with regional directors for improvement in salaries and working conditions. It appears that similar meetings were held on the same day in a dozen other cities, throughout the country.

C. E. Corcoran, trainmaster of the Chicago, Milwaukee & St. Paul, at Beloit, Wis., was killed on February 23 in the derailment of passenger train No. 301, at Latham Park, Ill., eight miles north of Rockford. The cause of the wreck has not been determined. One passenger was killed, and two seriously and 20 slightly injured. Three coaches rolled down a 20 ft. embankment.

The Minnesota legislature has before it two bills concerning railroads: the Hubert bill, requiring adequate and safe plank crossings, and the Swanson-Hitchcock joint resolution, advocating the reduction of rates on iron ore from Minnesota iron mines to Lake Superior ports from \$1 to 63½ cents per gross ton. The Swanson-Hitchcock resolution refers to General Order 28 (June 25, 1918), and declares that the higher rate on iron ore can only result in the closing of Minnesota iron mines and at the same time aiding the mines and mills of Alabama, Pennsylvania, and other states.

The shipper who loads bulk freight to the full capacity of every car assigned to him by the railroad is doing a good thing for himself, for the railroad and for other shippers; but there is such a thing as carrying a good thing too far. This is the substance of a notice that has been sent out by the Car-Service Section of the Railroad Administration, calling attention to the excessive enthusiasm of certain shippers of news print paper who insisted on having 30-ton cars, even when they had to wait for the cars to be brought from some distant point. Cars of higher capacity were available, but to use them for 30-ton lots the paper shippers would have had to lower their record for full-capacity loading!

The proposed restriction of immigration to the United States for four years is the subject of a resolution which has been adopted by the general executive committee of the Railway Business Association, in which all members of the association are urged to use their influence, in every direction possible, against the proposed legislation. The bill pending in Congress is opposed to the prosperity of the United States; desirable immigration should be fostered and not restrained. The satisfactory solution of the railroad problem may be in a measure dependent on immigration; proposals to build new lines or lay additional tracks might fail because of a famine in unskilled labor; and skilled labor has no job until the track is laid.

The vital importance of an early settlement of the railroad question, is the subject of a resolution adopted by the executive committee of the Railway Car Manufacturers' Association on February 18. This association, embracing the 19 principal car builders in the country, represents an industry employing about 100,000 men, and the resolution

calls upon all members to make every possible effort to secure the authorization of the addition of 750 millions to the revolving fund, asked for by the director general of railroads, and to use their influence to bring about an extra session of Congress as a means toward early settlement of certain questions, which early settlement is necessary to the revival of business in the car building industry. Without business the car shops cannot co-operate with other agencies in giving work to idle men.

Fourteen bales of silk were thrown out of a car of a west-bound freight train of the Delaware, Lackawanna & Western, west of Stroudsburg, Pa., on the morning of February 20, about two o'clock, and some thieves were waiting to carry off the freight in automobile trucks; but it is said that the railroad police and employees thwarted the plan of the robbers and recovered the silk; and one man is under arrest. It appears that the car containing the silk was watched all the way from Paterson, N. J., 69 miles, to a point beyond Stroudsburg, and that the theft occurred within a section of three miles between the point where the watchmen left the train and where other watchmen were to board it. The Scranton Times, which reports the occurrence, believes that one robber had secreted himself in the car before it started from Paterson and that other robbers followed the train all the way in automobiles. Among the measures taken to capture the robbers was the sending out of locomotives to stand on highway crossings and thus interfere with the movement of automobiles.

Audible Signals on the Great Western of England

The Great Western Railway of England, as appears from a statement in the Great Western Railway Magazine, now has torpedo-placing apparatus at several hundred signal cabins, or about 2,000 placers in all; and from 30 to 40 per cent of these instruments have been installed during the past two years. The Great Western has in operation several hundred locomotive cab signals, but the torpedo-placers, we may assume, are on those sections of the company's lines where the cab signals are not used. Some additional interlocking signaling have been installed during the past year and the total number of signal levers in service now, on the company's 3,000 miles of line, is 47,339. The number of cells of storage battery charged during the year 1918 in the signal department was 54,000.

Railroad Y. M. C. A.

Railroad men of the Chicago district and Young Men's Christian Association secretaries who are interested in railroad activities held a conference on February 20 and 21 at Chicago for the purpose of promoting a nation wide campaign to increase the membership of the railroad Y. M. C. A. This conference for the Northwestern and Central Western regions is the last of a series of regional meetings held throughout the country. Among the important changes that are contemplated are the adoption of a standard program in each railroad Y. M. C. A. throughout the country; the establishment of a rigid standard for the officers who are in charge of these departments and the adoption of a continental membership program. The latter contemplates the adjustment of the expiration dates of membership so that the dues of all members will be renewable annually, the country over, on the same date. The plan further contemplates a standard membership fee with a universally exchangeable membership ticket among railroad associations. It is proposed to increase the Chicago association membership from approximately 114,000 to 200,000 by this campaign, which is to be started in the near future. William J. Jackson, federal manager of the Chicago & Eastern Illinois, presided at the Chicago meetings.

Sidell & Olney Railroad to be Sold

The decision given by Federal Judge George W. English at Danville, Ill., ordering the sale of the Sidell & Olney railroad now operated by the Cincinnati, Hamilton & Dayton and the Cincinnati, Indianapolis & Western has been confirmed. Accordingly the road which operates between Sidell, Ill., and Olney, a distance of 85 miles, will be sold at public auction on April 15, at Casey, Ill., although an appeal has been entered in the United States Court of Appeals. The court has set the sale price at \$200,000 with the understanding that the road from Sidell to Kansas be operated with a privilege of junking the southern end of the road, from Kansas to Olney. If there is no bid above \$200,000 the property will go to Frank H. Potter of Chicago, who has bid that amount.

Snow Blockade in Kansas and Nebraska

A heavy fall of snow accompanied by a high northwest wind demoralized traffic in Nebraska and Southern Kansas for three days, February 13, 14 and 15. Telegraph and telephone wires were down and communication between many points was suspended. A train of the Union Pacific was caught in a drift west of Salina, Kan., and held for 48 hours. The passengers had nothing to eat but eggs, and the men on the train were forced to plow through snow drifts to the nearest town for food. Many Union Pacific trains were held at various points until snow plows cleared the road. Missouri Pacific trains in this section had to be annulled, but the Chicago, Rock Island & Pacific maintained an irregular service. The Golden State Limited of the latter road was 30 hours late before it was finally delivered to the road's southern lines. The Atchison, Topeka & Santa Fe had to send its California trains over the Santa Fe southern lines.

Nine Passengers Killed at Pittsburgh

In an accident to the "Versailles local" passenger train on the Baltimore & Ohio, near Swinburn street, Pittsburgh, Pa., on the evening of February 22, nine passengers were killed, and 70 or more were injured. The train was moving at about 40 miles an hour when its three passenger cars were struck on one side, and partially wrecked, by a locomotive which had been derailed while running on the adjacent main track. This locomotive appears to have been thrown off the track at a point where repairs were in progress and where a rail was not securely spiked. It was running at low speed. The local reports indicate that this engine had passed a block signal set against it. The foreman in charge of the repairs to the signal apparatus is quoted as saying that he waved a white lantern to stop the locomotive, but that after waving the light a few minutes the flame went out. He says that the engineman acknowledged this hand signal by two blasts of the whistle. The engineman is said to have claimed the block signal showed clear and also that he had not been flagged.

Trans-Mississippi Readjustment Congress

The Trans-Mississippi Readjustment Congress with 2,000 delegates from 18 states west of the Mississippi river passed resolutions opposing government ownership and operation of railroads at the closing session of a three-day convention at Omaha, Neb., on February 18, 19, 20. The purpose of the conference was to discuss the readjustment problems of the trans-Mississippi section.

The convention was divided into 18 groups, each of which considered questions pertaining especially to the industry represented by that group and resolutions passed by each of these groups were presented to the general congress for action. Practically all of the groups advocated private ownership and operation of the railroads, subject to governmental regulation and supervision. The composite resolution concerning the disposition of the railroads adopted by the general congress was as follows: "We are opposed to government ownership and operation of the railroads. The roads now operated by the government should be returned as soon as possible to former private ownership and management, subject to governmental regulation

and supervision which will prevent abuses of the past and secure to the public the greatest good to be derived from economical, efficient and co-operative management, eliminating restrictive legislation which has heretofore hampered much needed improvements." Harry A. Wheeler, president of the United States Chamber of Commerce in his address before the congress stated that "there has been a sluffing of enthusiasm, ingenuity and initiative under government control."

Getting Trains Over the Road

You are called and ready to leave at 10 p. m., but the brakeman comes up and tells you they are going to throw out a car on account of being crippled, and you pick out the bill for this car and go back to the office with it and get out fifteen minutes late; you have received a message from the despatcher to pick up a car of stock and two cars of powder at Newark and couple a second helper-engine in behind forty cars; the powder has to be cut in in a certain place in the train to comply with the law. Now you are at Redwood and have a time order to make Newark against a manifest train, but you find you must brass a car that is running hot, so you find after you are ready to go that you have not enough time to make Newark and you go to the first siding and side track. Finally you arrive at Newark, get your powder and live stock picked up and your second helper-engine in the train air-tested and ready to go; but a short-time stock train has shown up which must be given preference, and you are again delayed. On the way up the grade you find that the tonnage in the train is in excess of the figures shown and one of your engines has run out of water, so you cut it off and send it to the water tank for water, and wait its return. Several other things are liable to happen. Are you ready to quit? Probably "yes." Does the conductor who ordinarily handles this train quit? Not much. He will probably show up at Tracy not over thirty minutes late, because he has had all the assistance the despatcher can give him in the way of additional helpers, cutting out cripples and giving him help on opposing trains.—J. A. Shockey (S. P.) before Pacific Railway Club.

Automatic Audible Warning for Trackmen

A tunnel of the Metropolitan Railway, in London, which much of the time is filled with smoke or steam, has been equipped for its 2,200 ft. of length with an iron tube for giving notice of the approach of trains, the tube to be agitated so as to produce a noise, by means of treadles, and being so arranged that it can be put out of service when no men are at work in the tunnel.

It was found that horns or gongs could be heard not over 700 ft. in a clear atmosphere and a much shorter distance when the atmosphere was filled with smoke or steam. A galvanized iron tube, of about $\frac{3}{4}$ in. internal diameter, is slung along the side of the tunnel at the height of a man's ear. Hammers, to strike on this tube, are fixed, one at the middle of the tunnel and one on either side of it, each about two-thirds of the distance to the mouth, so that the distance which the sound must be conveyed is about 367 ft. from each hammer. The hammers are actuated by electro magnets enclosed in waterproof iron boxes, and the electrical energy is supplied by six two-volt storage cells; twelve volts, 60 ampere hours. The depression of a bar, at the entrance of the tunnel, opens an electric contact, and this causes the hammers to produce the desired sound in the tube; not very loud, but easily recognized. When the track bar is in its normal position no sound is made. The vibration of the tube may be felt, so that even a deaf man could avail himself of the warning by putting his hand on the tube. Any defect in the electrical circuit causes the warning to sound. As the train passes out of the tunnel it depresses a second bar, which energizes a relay and opens a contact, silencing the hammers.

The apparatus has received the approval of the Board of Trade. It is patented, and is made by the McKenzie, Holland & Westinghouse Power Signal Company, London.

Sauce for the Goose—and for the Gander

[From the Railroad Herald]

The government, in taking charge of the railroads, deferred grade-crossing improvements, so far as possible, until after the war, requesting state, county and municipal authorities also to withhold action. The way is now clear to resume this work. Two considerations are involved. The one is to abolish the grade crossing danger. The other is to safeguard the danger until it can be abolished.

We have so far noticed but one press comment excited by Mr. McAdoo's action; and it is amusing to note that all the criticism of the matter is now turned against the stupid ox-cart driver and the impatient motorist, whereas the editors used to gather up the faults in one and lay it all at the door of the railroads. Not a fragment of it ever fell elsewhere. This menace that neither city nor rural life could escape was everywhere solely an evidence of the bold schemes of corporate greed. Must we conclude that the "freedom of the press" means that under government ownership one opinion as to a given set of facts should be moulded in the public mind, and a different set when railroads are owned by private companies? This newspaper critic commits himself, apparently, to a policy which amounts to saying, in case of an accident, that when the government is the owner of the railroad, the victim of the accident had no business being there, and, if a private corporation is the owner, then the railroad had no business being there!

Mr. McAdoo's administration has also enlightened the public in regard to the freight-car robber. Many articles have appeared, the keynote of which was that now, since the government is the proprietor, railroad property will come in for a brand new form of protection against the trespasser and the thief. As if the government upon assuming the operation of the railroads entered upon a duty that did not already devolve upon it, to protect this property against any violation of law, and as if some new reason had arisen for the penalty of the car thief to be more severe!

Interesting Railroad Library for Sale

At the Anderson Galleries, Park avenue and 59th street, New York city, on the afternoons of March 10 and March 11, about 450 volumes of railroad history of England, America and other countries, are to be sold at auction. These books and other documents were selected by an Englishman and include dates from very early in the nineteenth century down to 1880. Included in the list are numerous important manuscripts, drawings, and prints. Manuscript journals of I. K. Brunel and autograph letters of George Stephenson, and others, are among the curiosities. There are large numbers of colored drawings, including a volume of Robert Stephenson's work for the London & Birmingham. Among the American material is a colored plate of the first train crossing the Humboldt river, original reports, charters, etc. There are many minor volumes as, for example, the train rules of the Concord Railroad, and of the Grand Trunk, the latter dated 1857.

There are six volumes of Herapath's Railway Magazine, and a book about subways (proposed) for London dated 1835. There are numerous original early advertisements and early passenger tickets and a collection of 21 medals commemorating the opening of various railroads. French, German, Dutch, Australian, Italian and Russian railroads are covered by publications dated in the thirties and forties of the last century, and other European countries, as well as Asia, Africa, Australia and South America are represented by very early publications.

Among the American railroads named in the index to this library are the Baltimore & Ohio, the Boston & Lowell, the Boston & Worcester, the Buffalo & Pittsburgh, the Central Pacific, the Chicago & Aurora, the Corning & Blossburg, the Delaware, Lackawanna & Western, the Eastern, the European & North American, the Galveston, Houston & Henderson, the Great Western (Canada), the Hudson River, the Providence & Bristol, the Reading, the Rutland & Burlington, the Southern Pacific, the Troy & Greenfield, the Union Pacific, the Vermont Central, the Virginia & Tennessee, and the Western. The dates on these documents range from 1830 to 1852, and a few later.

Traffic News

The Kalamazoo (Mich.) Chamber of Commerce announces the establishment of a traffic bureau under the direction of George J. Bolender as traffic manager.

The traffic bureau of the Sioux City (Iowa) Commercial Club has adopted resolutions urging on the President and Congress the enactment of legislation that will permit the early return of railroads to their owners.

Coal loading for the week ended February 8 amounted to 165,183 cars, as compared with 215,832 during the corresponding period of 1918. The estimated loading for the following week was 157,215 cars, as compared with 239,261 for the corresponding week of 1918.

J. L. West, formerly traffic manager of the Missouri, Kansas & Texas, is now at the head of the Transportation Bureau of the Dallas (Texas) Cotton Exchange. This bureau, which has just been established by the Exchange, will be conducted under the direction of a transportation committee.

The number of railroad tickets required for occupancy of a drawing room for seat service on day rides is now three instead of five; and three, instead of four, is the number required for the occupancy of a compartment for seat service on day rides. The number of sleeping or parlor car tickets required remains unchanged.

The Western Freight Traffic Committee has requested the various district freight traffic committees to docket for early consideration the question of cancelling all rules requiring the equalization of loaded and empty mileage on privately owned cars moving between points in western territory. This is not, however, to affect the charges on new or newly acquired cars.

Commercial organizations and corporation traffic managers in Cleveland and other points in Ohio, have created a temporary organization looking to the establishment of the "Ohio State Traffic League." The temporary officers are C. M. Andrus of the Otis Steel Company, Cleveland, Ohio, chairman; L. C. Macomber of the Toledo Commercial Club, Toledo, Ohio, secretary, and H. G. Brentlinger of the Standard Register Company, Dayton, Ohio, treasurer. A permanent organization will be formed at a meeting to be held in Columbus on March 24.

The Senate Committee on agriculture has favorably reported the Kendrick bill to place the distribution of refrigerator cars owned by the meat packers under the jurisdiction of the Interstate Commerce Commission. The bill also provides for the licensing of packers' facilities and would require the packers to dispose of their interests in stock yards within two years. The committee disregarded recommendations of the Federal Trade Commission that ownership of refrigerator and stock cars be acquired by the government.

A meeting of the livestock interests of the United States (shippers and receivers) for the purpose of agreeing to rules governing the presentation and adjustment of claims of loss and damage to livestock in transit and also to give consideration to necessary accessorial service in the transportation of livestock in the interest of shippers and carriers alike will be held at St. Louis, Mo., on March 18. The meeting was called by T. S. Walton, chairman of the livestock committee representing all railroads under federal control, at the direction of John H. Howard, manager of the Claims and Property Protection Section of the Railroad Administration.

Tidewater Coal Shipments Freed

The Fuel Administration has suspended its order requiring shipments of coal to tidewater to go through the Tidewater Coal Exchange, and also suspending an order prohibiting re-quirements of coal. Suspension of the governmental requirements in nowise affects the continued operation of the Tidewater Coal Exchange through voluntary arrangements made by shippers and the Railroad Administration.

Commission and Court News

State Commissions

The New York State Public Service Commission, first district, has asked the legislature of the state for an appropriation toward the abolition of dangerous grade crossings on the Long Island Railroad between East New York and Jamaica, about four miles. On this section of the road trains are very frequent and there are 21 crossings. The commission desires to authorize the expenditure of \$1,000,000, of which one-fourth should come from the treasury of the state, one-fourth from the city of New York, and the remainder from the railroad company. It does not appear that this sum will be sufficient to complete the work.

The New York State Public Service Commission, Second District, in connection with the publication of the report on the disastrous rear collision which occurred at South Byron, N. Y., on January 12, announces its purpose to hold an informal inquiry on the general subject of the prevention of collisions, the sessions to be held probably in New York City in the near future. The Commission expects to invite to participate in this inquiry prominent railroad officers and signal engineers, both from within and without the state of New York, the purpose being to seek authentic facts and well-informed opinions on the whole range of questions relating to the possible solution of the problem.

Court News

Recent Decisions Under Federal Employers' Liability Act

The Illinois Appellate Division holds that a checker employed by a railroad company is engaged in interstate commerce when checking freight out of a car which had been loaded in another state and brought therefrom into Illinois by the company.—*Connelly v. Michigan Central*, 207 Ill. App. 25.

The New York Appellate Division holds that a laborer, fatally injured while cleaning soot from a boiler in a railroad's power plant, generating electricity for operation of trains on one railroad wholly in New York state and on another partly in New York and partly in New Jersey, was engaged in interstate commerce within the act.—*Guida v. Pennsylvania*, 171 N. Y. Supp. 285. Decided July 1, 1918.

The Texas Court of Civil Appeals holds that where lumber is loaded in a box car in one state and is shipped to another state to be used in the manufacture of doors for grain cars designed for the handling of interstate shipments of grain, an employee who unloaded the lumber in the latter state was engaged in "interstate commerce."—*Gulf, Colorado & Santa Fé v. Drennan* (Tex.) 204 S. W. 691. Decided June 29, 1918.

A yard brakeman was a member of a crew attached to a switching engine, and his day's work was in switching cars in interstate and intrastate commerce. He had just assisted in switching a string of 50 or 60 cars, some of which were loaded with interstate shipments and was returning to his engine when he was struck and injured. It was held he was engaged in interstate commerce. *Erie v. Downs* (C. C. A.) 250 Fed. 415. Decided April 10, 1918.

The Maryland Court of Appeals holds that a freight brakeman, who is a member of a crew taking a train from a point in one state to a point in another state, is within the act. Two companies had an agreement whereby each had the right to use the tracks of the other. It is held that an employee of one road who was killed while working on the tracks of the other road, was not at the time of his death an "employee" of the latter road, under the federal act, although the agreement specified that train employees should be subject to the regulations and orders of the company owning the tracks on which they worked.—*Hull v. P. & R. (Md.)*. Decided April 3, 1918.

Foreign Railway News

Service between London and Paris for civilians was introduced over the route via Folkestone on February 3.

The Nyassaland Government is proposing to spend \$4,000,000 on a new railway, to serve the country bordering on Lake Nyassa.

All French mobilized reservists who are railway employees, with the exception of those belonging to the active army, are to be immediately placed at the disposal of their respective railways.

The Belgian Government, on February 5, took over the management of the whole Belgian State Railway system, which has hitherto been run by the British, French and United States armies.

A new Italian port will result from the decision of the Italian government to establish a great commercial port at Varano Garganico, on the Adriatic, with a view to improving communications with Southern Dalmatia. A new railway terminating at Varano will place the port in direct communication with Rome and Naples.

The British railway supply export figures for the whole year 1918 are given in the Board of Trade returns for December. They are as follows, the corresponding figures for 1917 being given in parentheses. Locomotives, \$5,377,435 (\$8,147,270); rails, \$2,421,000 (\$3,452,375); carriages, \$2,807,380 (\$825,880); wagons, \$1,644,055 (\$2,215,120); wheels and axles, \$1,722,340 (\$783,165); tires and axles, \$3,098,795 (\$2,697,645); chairs and metal sleepers, \$820,450 (\$368,410); miscellaneous permanent way material, \$2,785,165 (\$2,472,210); total permanent way, \$6,105,475 (\$6,319,630). The weight of rails exported was 26,335 tons (38,900 tons), and of chairs and metal sleepers, 10,173 tons (5,650 tons). Of the locomotive exports \$147,950 (\$1,138,850) in value went to South Africa and \$1,237,050 (\$882,965) to British India.

The International Railway Congress has resumed its headquarters at Brussels with the return to that city of M. L. Weissenbruch, the general secretary. The Congress, before the war, held its meetings every five years, meeting in 1895 in London, 1900 in Paris, 1905 in Washington, 1910 in Berne, and the 1915 meeting was to have been held in Berlin. The Congress, before the war, also proved of service to railway men the world over by the publication at Brussels of a monthly bulletin.

Daily Train Service from Nogales, Mexico

Consul Bartley F. Tost, at Guaymas, Mexico, in a recent issue of Commerce Reports says that he is reliably informed that after March 1, the tri-weekly passenger train service of the Southern Pacific Railroad of Mexico between Nogales and Guaymas, Sonora, will be converted into a daily service, except Sundays. From Guaymas south to Mazatlan a tri-weekly service will be maintained.

Books on World Trade

With a view to guiding business men as well as general readers "who take an interest in ships and the sea, and other lands," the United States Shipping Board has recently issued several interesting booklets giving a bibliography of books on world trade in its various aspects. The lists were compiled for the Shipping Board by the Free Public Library of Newark, N. J., and include a list of books on world trade; a list of books on foreign languages; a list of books on foreign countries, including a list of 100 of the best books on modern travel, and a list of books on ships, commerce and the merchant marine. The Board is also issuing a table entitled "Tonnage Explained," describing the five kinds of tonnage in use in the shipping business.

Locomotive Building in Glasgow

The firm of William Beardmore & Co., Ltd., Glasgow, which during the war period and previously played an important part in the construction of ships, armaments, and munitions, has now added to its works at Dalmuir a locomotive building department. The work of constructing the locomotives is to be undertaken in the department which, during the past four and a half years, has been devoted to the making of gun-carriages and gun-mountings, as there were no workshops set apart for locomotive construction at Dalmuir previous to the war. A new plant of an up-to-date design is being installed and the necessary alterations carried out. It is understood that the firm have already on hand a number of contracts, including one from the government to build 35 locomotives for an Indian railway. Although the firm has not hitherto undertaken locomotive building from start to finish, it has manufactured certain important parts of locomotives for many years.

London to Jerusalem: The New Orient Express

Germany's much-advertised Balkan express ceased to run when the Serbians re-occupied their invaded country, but the International Sleeping Car Company intends to re-establish the Orient express from Ostend to Constantinople at the earliest possible date. Plans are also being considered for the running—possibly next winter—of a service from London to Jerusalem, with a through train from Calais. The company is now running services from Paris direct to Mayence via Strasbourg, and from Paris to Trèves via Metz and Luxembourg. Restaurant cars are also now running between Paris and Lille and Paris and Brussels. Naturally the pre-war time schedules have not yet been restored. The Brussels train, for instance, leaves Paris at 7:30 a. m., reaches Lille at 2:50 a. m., Tournai at 4:45 p. m., and Brussels at 9:20 p. m. Before the war the journey could be covered in 4¼ hours. The Mayence train leaves Paris at 8 p. m., and reaches its destination at 12:52 p. m., the following afternoon. Over 16 hours is also allowed for the journey from Paris to Trèves.

New Light Railway Projected for South Korea

Under date of July 5, official permission was granted by the Government-General of Korea, for the establishment of a light railway starting at Masan and connecting with the Honam line at Songchyonli. A branch line will also run from Wanchom to Chonju, the capital of North Chonia Province.

The main line measures 157 miles and the branch line 46 miles, making a total of 303 miles. The gage of the railway will be 2 ft. 6 in., and the building expenses are estimated at 6,000,000 yen (\$3,000,000).

According to the plan as it now stands, the building of the railway will be started during autumn of 1919, and finished as follows:

First period—Songchyonli to Tamyang and Masan to Kumpuk; from autumn 1919 till spring 1921.

Second period—Tamyang to Wanchon, Wanchon to Nanwon and Kumpuk to Chinju; from spring 1920 till autumn 1921.

The Value of the Railways of Alsace-Lorraine

The financial correspondent of the Daily Telegraph (London), dealing with the return of Alsace and Lorraine to France, said recently that just before the war 40,000 railway men worked on this system, and the traffic was estimated at 2,800,000 tons of merchandise and 48,000,000 passengers. However valuable this acquisition may be, he said, this railway system cannot be allowed to remain in the condition in which it was delivered to the French by the Germans. It is arranged in such a manner as to multiply communications between Alsace and Germany to the serious disadvantage of those existing between Alsace and France. The first are assured by 17 lines, of which 11 are double tracked, whereas the second, that is, with France, have to be satisfied with

three main lines, three secondary lines and a tramway. The contrast is significant, and shows that the whole economic activity of the annexed provinces under German domination was compelled by the law of the conquerors to turn toward Germany. Now the three departments of Alsace and Lorraine look to the west. As soon as possible new lines must be opened which will admit of a transformation in economic activity. It will be necessary now to establish easy means of communication between the iron and steel basin of Briey and the coalfields of La Sarre. By the union of these two important mining regions a matchless metallurgical center should be developed which would place France in the front rank of the great nations producing iron and steel.

Proposed Electrification of Swedish State Railways

According to a report issued by the Administration of the Swedish Railways, the plan of electrifying the whole of Sweden's railway system is now approaching its realization, says the Railway Gazette of London. In 1915 the Railway Administration found it necessary to make a closer inquiry into this question, as it appeared that the high cost of fuel made it advisable to adopt electrical power. It is estimated that if the transition had been made in the year 1913 it would not have cost more than the actual cost of fuel in 1915. As the war proceeded it was found necessary to have recourse to wood instead of coal for firing the engines, and this naturally considerably reduced the speed. That, however, was not the worst of the matter. In the year 1917 40,000,000 cubic meters of timber were consumed, whereas the annual increase in the supply of timber was only 25,000,000 to 30,000,000 cubic meters, and at the same time a large quantity of coal was also used. The steady increase in the time of the train journeys was also a serious matter. A journey from Stockholm to Kiruna (Lapland) now occupies 39 hours; with electrical working the journey could be done in 18 hours. The journey from Stockholm to Gothenburg now occupies, even in the most favorable circumstances, 11 hours, whereas an electrically-driven train could do it in 5½ hours. The Railway Administration estimates that the electrifying of the railways can be carried out in about 10 years. There is plenty of water power in the country, and already several large power works are in existence. It is also suggested that cables strung along the railway lines will be able to supply power for agricultural purposes.

Bagdad Railway in Good Condition

With the elimination of Turkey from the control of Mesopotamia and Syria great developments may be expected in those regions in which the Bagdad Railway will take a commanding part. A correspondent of The London Times says of the section of the railway including the Taurus tunnels:

"The railway between Bozanti, in the Taurus range, and Aleppo, is, on the whole, in first class condition. Some excellent work has been done. The organization near the Taurus tunnel is extremely interesting. . . . Trains can run all the way, but the tunnels need lining with masonry. This is urgent, otherwise they will fall in after the heavy rains; indeed, some of the new cuttings have already fallen. The scenery is magnificent in the tunnel area, and there is a very fine bridge with piers 220 feet high.

"On the Amanus range the tunnel work has been finished, though there are many difficulties owing to the sinking of the high banks. The track is laid and well ballasted for heavy trains to run at forty-five miles per hour. There is ample rolling stock and materials to meet present needs.

"The most striking feature of the railway construction work has been the survey. Owing to the precipitous nature of the mountains, ordinary methods were impossible. A special stereo-photographic theodolite was invented for photographing the mountain passes, and tunnels of a total length of eleven kilometres were plotted and planned from maps made from photographs."

Concerning the economic possibilities of the region touched by this part of the railway, the correspondent says:

"Adana vilayet has an extremely rich soil and two or three

crops are possible every year. At present, owing to the unsettled state of the country, land is very cheap. Under good government, labor should be plentiful, and it is probable that, other things being equal, more progress could be made there than in Palestine and Syria.

"There are many mines in the Taurus area. Coal also is found in the vicinity, but the quality has not yet been proved. Forests are plentiful and magnificent, and all the requirements of Egypt could be supplied if cutting were organized and the necessary shipping could be provided."

Japan's Growing Interest in Chinese Railway Affairs

The details given in this column last week, page 471, by the *Railway Age's* correspondent in Peking, concerning the six Japanese railway enterprises in Manchuria, Mongolia, Shantung and Kiangsu, China, have also been covered in an Associated Press despatch from Paris, Tuesday.

The despatch gives a translation of the notes exchanged between China and Japan in September, 1918, granting to Japanese financiers the privilege of making loans to China for the building of railways in China proper and to Japan the right to participate in the operation of the railways now constructed in Shantung province.

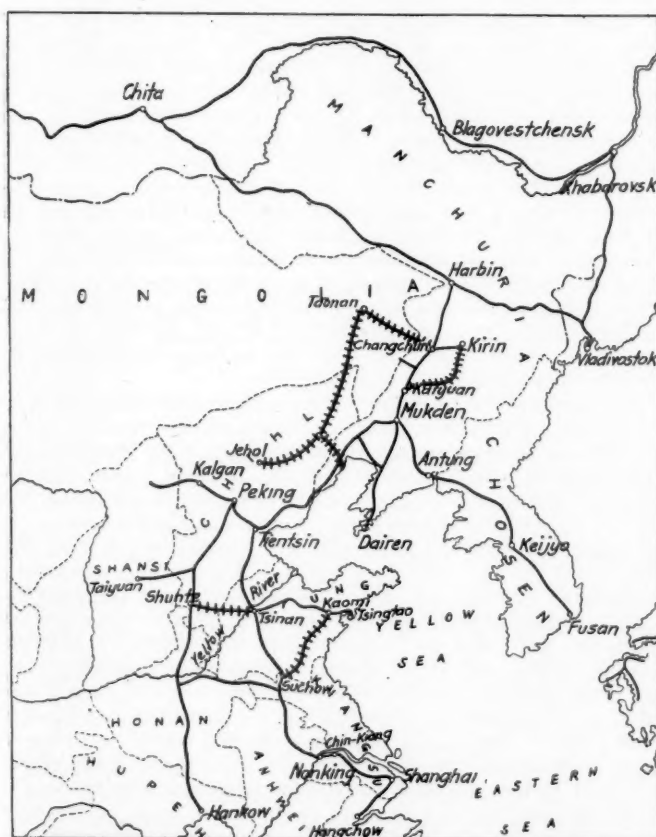
These notes, which are now before the Peace Conference, supplement the treaty and notes of May 25, 1915, between

German owned lines with the other principal railway lines in north China. The third set stipulates the conditions under which Japan may participate with China in Shantung province affairs.

The Associated Press despatch follows with the translations of the three sets of notes, but lack of space and the fact that full details were given in last week's issue makes it unnecessary to reproduce them here.

The railway lines in question are shown on the map. The four in Manchuria include: (1) A line from Kaiyuan northeast to Hailung, thence to Kirin, a total of about 180 miles; (2) one from Changchun, north of Mukden, northwest to Taonan, in Mongolia, a distance of about 200 miles, and (3) from Taonan southwest toward Jehol, in Chili province, north China, with (4) a spur extending to the sea at a point still undetermined, but probably Hulutao.

The proposed new railways in Shantung province include (1) a line from Kaomi, 20 miles west of Tsingtau, running southwest to Suchow, about 250 miles, connecting with the partly constructed Belgian line from Lanchow, in Kansu province, to the sea, and (2) a line from Tsinan, in Shantung province, directly west to Shunte, a distance of about 150 miles. This would connect with the railway operating from Peking to Hankow, on the Yang-Tse river and connect Tsingtau with all the important railways in north China.



The Railways in China Showing in the Cross-Hatched Lines the Railways Mentioned in the News Despatches

Japan and China, in which the Chinese government engaged to recognize all agreements between the Japanese and Germans respecting the disposition of German rights and interests in Shantung province.

Baron Goto, the Japanese minister of foreign affairs, and Tsung-Hsiang Chang, Chinese minister to Japan, signed the three sets of notes exchanged on September 24 last year. One set outlined the new railways which Japanese capitalists may finance in Manchuria, Mongolia and Chile province, north China.

The second set outlines the railways Japanese capitalists may finance in Shantung province, to connect the existing

The British Import Restrictions

George Ed. Smith, president of the American Manufacturers' Export Association and president of the Royal Typewriter Company, discussing the British import restrictions, said, in part, in a statement issued by the association Monday:

"From information which has reached the association since it was announced that the British import restrictions would be resumed on March 1, it would appear that the imposition of these restrictions is simply a temporary expedient rather than an indication of a permanent English policy. From statements of government officials as well as well informed business men in England there is no reason to believe that Great Britain intends to erect a permanent wall against the manufacturers of other countries.

"What has happened is that England has determined to get back upon a normal basis, and is readjusting her business affairs more quickly than we are. She has felt the necessity for giving her own people a chance to put their house in order before opening up her markets to the world. This means that for a certain period a certain percentage of goods manufactured in other countries will be kept upon a restricted list, and that until these restrictions are removed any attempt to expand the sale of these products in England is impracticable.

"The American manufacturer realizes that England is under the necessity of readjusting her domestic affairs. It is true that this readjustment will work considerable hardship on American firms which have a large investment in Great Britain and which cannot supply their English branches with stocks for some time to come. On the other hand, it does not mean that the American manufacturer must abandon his English branches because we are assured that within six months or at most a year, England will once more resume importation upon normal lines. Prior to the war we were England's best customer and she was ours. Excluding the raw materials exported from the United States to Great Britain, the total manufactured exports from us to England and from England to us were approximately the same. We need English markets and England needs American markets, and it is not likely that England would seek to delay longer than necessary the resumption of a mutually beneficial trade.

"While no market could possibly compensate the American exporter for the permanent loss of his English markets, he can make the best of the present situation by devoting himself, heart and soul, to developing his other export fields. He will never have a better opportunity for establishing himself in these new markets than he has at present when there is an abnormal demand for the things which he can supply.

"The manufacturer who promptly adopts this policy under the spur of present necessity should be able to rebuild his

English trade at the proper moment and with a larger volume of export sales in other markets than would be possible if he now continued to send his accustomed exports to Great Britain."

France Needs 3,000 Locomotives and 100,000 Cars

France, as a result of the war, finds itself short of 3,000 locomotives and 100,000 cars, says an Associated Press despatch, while the transportation material that is still nominally on the active list is badly out of repair. The shortage of rolling stock has become very acute lately, for the number of locomotives and cars out of commission for various defects has increased since July last by 10 and 30 per cent respectively. To meet the growing difficulties in the matter of repairs, the State munition factories at Lyons, Toulouse and Roanne have, since the armistice, been turned with all speed into railway repairing shops.

The French Government has long hesitated to place orders in the United States, the despatch continues, where alone new rolling stock could be procured, for fear of depressing the French rate of exchange unduly; but the country's needs became so pressing that orders have now been given, it is understood, for purchasing 800 locomotives and 32,000 cars, while 27,000 American cars that were to have been shipped to France for the use of the American Expeditionary Force have also been acquired. Perhaps the biggest task before the French transportation experts is the restoration of the destroyed railway tracks in the invaded part of France. An army of 75,000 workers will be engaged on this great work for months. It includes the reconstruction of fourteen tunnels and 16,000 bridges for which 50,000 tons of metal are required.

In addition, hundreds of miles of main and branch lines have been temporarily "borrowed" for military purposes from elsewhere, and must now be relaid. The departments affected have been divided up into sections, for each of which a "chief reorganizer" has been appointed. Each of them has been required to give an undertaking that he will have his section in proper working order, as regards transportation, in the course of the present year. An appropriation of 120,000,000 francs has been made by the government to enable the railway companies to purchase rolling stock for urgent public needs. The Minister of Public Works has declared that, in his view, the restoration of France's Northern and Eastern railway systems should be made a first charge upon the war indemnity to be paid by the enemy.

Railway Construction in Mexico

Manuel Aguirre Berlanga, Secretario de Gubernacion of the Mexican Government, has officially announced that construction is now in progress on about seven hundred miles of new lines of railway, says a correspondent in the City of Mexico. This work is being done at the joint cost of the federal government and the respective states traversed by the roads. While the primary purpose of inaugurating extensive railroad construction at this time is to give steady employment to thousands of laborers, the new lines will also afford transportation outlets to rich mineral and agricultural districts, it is pointed out by Mr. Berlanga. All of the materials for the building of these railroads are obtained in Mexico. The cross-ties come from the native lumber mills, and the steel rails are manufactured at the Monterey Iron & Steel Company's plant at Monterey. Mr. Berlanga said:

"The railroads now under construction by the government are to run between Cuatro Ciénegas, in the state of Coahuila, to Chihuahua, via Sierra Mojada, a distance of about 450 miles; from Durango to the Pacific port of Mazatlan, a distance of about 135 miles; and from Durango to Canitas, a distance of about 130 miles. All of these lines are important. The building of a railroad from Durango to Mazatlan has been under consideration for 30 years or more. Many surveys were made to locate a feasible route across the Sierra Madres. This has been finally accomplished and the road will be finished in due time, thus establishing a new trans-continental line across Mexico. The Cuatro Ciénegas-Chihuahua line will be the means of opening to development

vast coal fields in Northern Mexico, while the Durango-Ciénegas road will shorten the rail distance between Durango and the capital about two hundred miles and will give a shipping outlet to some rich mining districts.

"Durango is a rich mining state and this railroad construction will be important in adding to the wealth of the nation. The government has enough money to undertake all these works and, in addition, it has established many commercial museums to which natural and manufactured products are brought. Then, besides, the government is expending money to bring all kinds of agricultural implements for the farmers, these implements being distributed along the government-controlled railroads to the farmers at cost price on long-time payments. This has all been done while there has been so much talk of distress in Mexico! It is obvious that if we were in such a shape as has been represented the government could not do these things.

"It is very probable the railroads in the state of Yucatan will be bought by the government, financial arrangements now under way having assumed such shape already, the tendency is to shortly take control. The money will be found to buy these railroads.

"I am aware of the fact that many persons in the United States are misinformed about the real conditions in Mexico. They hear that a train has been blown up or a bridge has been burned. Perhaps life has been lost.

"Take the railroad from Mexico City to Vera Cruz, the line from San Luis to Tampico, or that on the Isthmus of Tehuantepec, to Salina Cruz. These railroads cross a country densely wooded. Two or three men can approach to within ten or fifteen yards of the railroad track with no one aware of their presence. They easily can reach the track, place a bomb, and the train, when it passes, is blown up.

"When the people of the United States read of this they think Mexico is not settled and they pass judgment on the entire country. They do not know that those bandits or train wreckers exist mainly due to topographical conditions. In rugged mountains and practically trackless forests they have their hiding places and it is almost impossible to pick up their trail once they have disappeared. They are not a force, these violators of the law. They are in small groups, and eventually must succumb to the law.

"It is simply a question of time before Mexico will take her place as a big producer. As soon as the world is ready to trade, then the great nations will bring to Mexico what we need in raw materials and the finished products, and Mexico will export to them what they need in all those materials so richly abundant here. As our custom house receipts increase the local commerce in the various states also will increase. Profits of the merchants will grow larger from the stimulated business and more money will be in the country.

"Our budget heretofore has been nearly 75 per cent higher than formerly, due to the great demands of the reconstruction program, yet the revenues are almost meeting it and soon we shall not only be able to cover it but will have a surplus, a certain amount of cash. There is this to be considered: Many of the mines are not working, the owner is not getting returns and the government is not receiving its share, but despite the fact that there is no paper money in circulation, the country for two years having been on a strictly coin basis, there is enough gold and silver for all transactions. Right now coinage of gold and silver is necessary and, say, six months from now, we will have not only sufficient money coined but a surplus.

"Though many of the mines are not working, Mexico produces much gold and silver and, from those mines that are working, a percentage comes to the government as revenue. At our customs house gold is paid. All this is brought here and coined. Then, too, many persons buy silver bars that are bought in by the government.

"If things continue on the same footing as now, very soon we will be able to cover our budget, and, if so, we will begin paying part of the overdue interest on our foreign debt. It is only a question of a little patience, six months, I believe, is all that will be required. Just now, we're a little short of money but we're progressing fine. If we could get financial assistance we'd be glad; however, it is not absolutely necessary."

Equipment and Supplies

Locomotive Deliveries

The following new locomotives were shipped during the week ending February 15:

Works	Road	Number	Type
American.....	Virginian	5	USRA Mallet
	C. & O.	2	LOW. SW.
	C. B. & O.	2	USRA Santa Fe
	Cent. of Ga.	1	Mountain
	Oregon S. L.	2	USRA 6W. Sw.
Total		12	
Baldwin.....	Atch. Top. & St. Fe.	3	Mikado
	B. & O.	4	USRA Mikado
	Penn. R. R.	1	Mikado
	Phila. & R.	1	Mallet
	Lehigh Valley	1	Pacific
	Norf. & West.	1	Mallet
	Great Northern.	1	Mikado
Total		12	
Grand total.....		24	

Cars Constructed in Railroad Shops

The following new cars were constructed in railroad shops during January:

Class of cars	Steel	Steel underframe	Steel center sills	Wood	Total
Passenger—					
Sleeping .....	..	..	..	..	..
Parlor .....	..	..	..	..	..
Dining .....	..	..	..	..	..
Parlor observation .....	..	..	..	..	..
Dining observation .....	..	..	..	..	..
Passenger coach .....	..	..	..	..	..
Passenger baggage .....	..	..	..	..	..
Passenger and mail .....	..	..	..	..	..
Mail .....	..	..	..	..	..
Baggage and mail .....	..	..	..	..	..
Baggage .....	..	..	1	..	1
Express .....	..	..	..	..	..
Express and refrigerator .....	..	..	..	..	..
Horse express .....	..	..	..	..	..
Milk .....	..	..	..	..	..
Total passenger equipment.....	0	0	1	0	1
Freight—					
Stock .....	..	..	65	17	82
Hopper .....	..	..	..	112	112
Gondola .....	..	..	..	24	24
Flat .....	..	17	4	7	28
Coke rack .....	..	7	..	7	18
Work car	4	..	..	..	4
Miscellaneous freight cars.....	7	..	1	8	72
Caboose	56	5	..	229	381
Box	147	..	..	..	..
Refrigerator .....	..	..	..	..	..
Total freight equipment.....	158	85	70	404	717
Total passenger and freight.....	158	85	71	404	718

Locomotives

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for a second-hand, standard gage locomotive weighing 15 to 20 tons.

Freight Cars

THE UNITED STATES NAVY DEPARTMENT, Washington, is inquiring for 4 rotary dump cars.

THE ANACONDA COPPER MINING COMPANY, New York, is inquiring for 4 50-ton ore cars.

THE MARQUETTE CEMENT MANUFACTURING COMPANY, La Salle, Ill., has ordered 100 mine cars from the Lincoln Steel & Forge Company, St. Louis, Mo.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for 2 second-hand box cars, equipped preferably with automobile end doors.

Supply Trade News

Geo. N. VanSweringen, sales representative, has been appointed assistant to the vice-president of the Chicago Railway Equipment Company, with headquarters at Chicago.

The Norbom Engineering Company, Inc., designers and builders of hydraulic dredges and ship yard machinery, announces the transfer of its offices from the Denckla building, Philadelphia, Pa., to its plant at Fifth and Ellis avenues, Darby, Pa.

The annual meeting of the Chicago Pneumatic Tool Company, Chicago, scheduled for February 24, in Jersey City, N. J., has been postponed until March 17. On account of a recent reorganization of the company's auditing department, the annual report is delayed.

The Interstate Car Company, Indianapolis, Ind., is erecting a steel car and tank car repair shop and fabrication plant at Indianapolis, Ind. The building will be of structural steel, 83 ft. by 245 ft., and 40 ft. high, costing approximately \$50,000. George J. Dive is in charge.

At the organization meeting of directors of the Air Reduction Company, Inc., New York, held on February 19, the following officers were elected: A. S. Blagden, president; A. R. Ludlow, vice-president; C. E. Adams, treasurer; M. W. Randall, secretary; C. L. Snow, assistant treasurer; C. E. Emerson, assistant secretary.

Lieutenant Sherman C. Amsden, formerly connected with Mudge & Co., Chicago, has been appointed assistant to president, in which position he will have charge of publicity, special sales plans, and investigations. Mr. Amsden was born at Manchester, Mich., in 1889, and was educated in the public schools at Manchester and the high schools of Brooklyn, N. Y., and Detroit, Mich. His first business experience was in the employment of Burnham, Stoepel & Co., a wholesale dry goods firm at Detroit. One and one-half years later he entered the service of the Atchison, Topeka & Santa Fe, at Topeka, Kans., as chief clerk to the division freight agent, later becoming assistant editor



Lieut. S. C. Amsden

of the Employees' magazine of the Chicago, Rock Island & Pacific, at Chicago. Mr. Amsden entered the employ of Mudge & Co. in 1914, and on November 1, 1917, enlisted in the air service, taking ground training at the United States School of Aeronautics at the University of Illinois, and flying training at Carruthers Field, Love Field and Langley Field, receiving a commission as lieutenant on July 1, 1918. Upon his honorable release from the service he returned to Mudge & Co. to become assistant to president.

Fred Mathews, sales representative of the Union Metal Products Company at Chicago, has been appointed southern manager of the Standard Railway Equipment Company, the Pressed Steel Manufacturing Company, the Imperial Appliance Company and the Union Metal Products Company, with headquarters in the Candler building, Atlanta, Ga.

W. B. Gibson, manager of the mining machinery department of the Allis-Chalmers Company, of Milwaukee, Wis., has been appointed manager of the small tank department,

and **R. C. Huntington**, manager of sales promotion of the Fuller Rubber Company, Hampton, Ohio, has been placed in charge of department of sales, promotion and advertising of the Wm. Graver Tank Works at Chicago.

Emerson Knoff, sales agent for the United States Steel Product Company for a number of years at Seattle, Wash., has been appointed vice-president and general manager of the Gerrard Wire Tying Machines Company, Inc., with offices in the Century building, Chicago. Mr. Knoff was born in 1882, at Cheyenne, Wyo., and received his early education in the public schools of Seattle. Upon his graduation from a Seattle business college at the age of 17 years, he entered the employ of the Seattle Hardware Company as office boy, remaining with that company in minor positions for three years. In 1900, Mr. Knoff entered the employment of the American Steel & Wire Company as clerk in the sales department, and four years later was appointed sales agent at Seattle. The American Steel & Wire Company became a subsidiary of the United States Steel Corporation in 1901, and when the United States Steel Product Company formed a Pacific coast department in 1911 to handle the Pacific coast business of the United States Steel Corporation, Mr. Knoff continued as sales agent, until his recent appointment.



Emerson Knoff

The Baldwin Locomotive Works

The highest gross sales ever recorded in the history of the Baldwin Locomotive Works are shown in the annual report for the year ended December 31, 1918, the total amounting to \$123,179,251, compared with \$98,263,865 in 1917, the previous record year. The business of the company last year was largely confined to government orders, 11 railway mounts for 14-inch guns and 16 caterpillar mounts for 17-inch guns being constructed as well as 3,532 locomotives, the total having a value of \$109,515,970; other regular work was completed amounting to \$13,663,281.

Operating costs totaled \$105,322,455, and gross profits were \$19,760,441, from which deductions for taxes and interest left \$18,262,112. From this was deducted reserves for depreciation, amortization of buildings and machinery and reserves for taxes, along with other charges, amounting to \$12,509,816, leaving a net profit before preferred dividend payments, which amounted to \$1,400,000, of \$5,752,292. The surplus, after the preferred dividend payments, was \$4,352,295, equal approximately to \$21 a share on the \$20,000,000 common stock; but as \$2,500,000 has been appropriated for plant improvement, which is still unexpended, the surplus for the year was reduced to \$1,852,295, equal to about \$9 a share on the common stock. The amount set aside for taxes, \$6,500,000, was unusually large when compared with \$1,750,000 set aside for that purpose last year.

The Eddystone Munitions Company, controlled by the Baldwin Locomotive Works, and which was formed in 1917 to manufacture munitions, last year completed contracts aggregating \$14,636,479. Contracts have been suspended subject to adjustment amounting to \$6,179,620. Owing to the ending of the war the report stated that this company is now undergoing liquidation.

The Standard Steel Works, another subsidiary, had gross sales of \$24,912,467 and net profits of \$934,600. Bills payable of \$2,500,000 were paid off during the year. Government contracts cancelled after the signing of the armistice totalled \$2,500,000. Bills payable of \$8,250,000, which the Baldwin company had outstanding at the end of 1917, the report showed, had been paid off last year.

In reviewing operations, President Alba B. Johnson says:

"When the greatest production had been reached the armistice was signed and \$68,400,000 of contracts were cancelled. The prior contracts received and set aside to give precedence to government orders had been taken when costs were lower than at present. The completion of these delayed contracts will undoubtedly entail a reduction of profits, and in many cases considerable loss. The uncanceled government contracts are now largely completed and there are no immediate prospects of further government orders. The railroads of the United States, whose needs would naturally tend to relieve the present situation, are under control and operation of the United States Railroad Administration, which is pursuing a policy of retrenchment of expenditures.

"So long as this curtailment of domestic business continues the foreign markets must be the chief source of orders. But in view of the political unrest abroad and the time it will take for readjustments to be made so that business can be obtained from foreign sources," Mr. Johnson says, "the board of directors have adopted the conservative policy of strengthening the company's finances, believing that the interests of the stockholders were best served by placing the company in the strongest financial position to meet the uncertainties of the future. For this reason they have continued the policy of omitting the dividends on the common stock."

J. W. Hackett has become associated with the Okonite Company, New York, as sales engineer, effective February 17. Mr. Hackett was connected with the signal department of the New York Central until 1913, when he became sales engineer of the Federal Signal Company, with office at New York, with which company he remained until January 1, 1918. On October 1, 1917, he was commissioned first lieutenant of engineers in the United States army, and ordered into active service on January 5, 1918. After spending three months at the Engineer Reserve Officers' Training Camp at Camp Lee, Petersburg, Va., he was ordered to the office of the chief of engineers at Washington, D. C. He was put in charge of the production, inspection and transportation of sound and flash ranging apparatus.

H. A. Jackson, president of the Chicago Pneumatic Tool Company, Chicago, returned February 19, from England, where he has been inspecting the foreign plants of the corporation. The Consolidated Pneumatic Tool Company, Ltd., and the Pneumatic Tool Company (respectively the selling agency and the manufacturing corporation), subsidiaries of the Chicago Pneumatic Tool Company in England, were found to be in excellent condition. During the war the company has made some profit manufacturing bayonets for the British government while carrying on its regular tool business to capacity. News of the disposition of the International Compressed Air & Electric Company of Berlin, Germany, which the Chicago Pneumatic Tool Company owns, has not yet been received, although Mr. Jackson has been striving for a year to get word of this property.

Trade Publications

ELECTRIC INDUSTRIAL TRUCKS.—Three types of electric industrial trucks designed for different services including a carrying truck, an elevating platform truck and a tractor, manufactured by the Buda Company, Chicago, are described in its bulletins 327, 328 and 329. These give a general description of the construction and specifications for each type as well as illustrations and drawings. Bulletin 326 contains a brief description of the mechanical features common to all three types.

RUST PREVENTIVES.—The Dearborn Chemical Company, Chicago, Ill., has issued a booklet entitled The Prevention of Rusting or Corrosion of Iron and Steel, for the purpose of presenting evidence of the success that has followed the use of No-Ox-Id, a rust preventive developed by the Dearborn Chemical Company, as well as to describe other Dearborn products, including Dearboline, a preparation for cleaning machined parts of emery or grease, Klean-Kleen, for use in cleaning metal during various stages of manufacture, and cutting, quenching and drawing, oils, etc.

Railway Officers

Railroad Administration

Regional

W. G. McEwan, superintendent of dining cars of the Louisville & Nashville, has been appointed a member of the Inter-Regional Dining Car Committee, representing the Southern region, to succeed **W. C. Francis**, deceased.

Federal and General Managers

J. B. Yohe, general manager of the Pittsburgh & Lake Erie, the Lake Erie & Eastern, the Monongahela Railroad, the Pittsburgh & West Virginia, and the West Side Belt Railroad, has been appointed federal manager, with office at Pittsburgh, Pa.

W. E. Williams, general superintendent of the Missouri, Kansas & Texas, has been promoted to general manager of the Missouri, Kansas & Texas (exclusive of the Trinity branch, the Beaumont & Great Northern and lines west of Whitesboro, Texas), the Union Terminal of Dallas and the Houston & Texas Central, with headquarters at Dallas, to succeed **W. A. Webb**, who has resigned.

Operating

S. T. Grimshaw has been appointed trainmaster of the Seaboard Air Line, with office at Hamlet, N. C., vice **C. L. Sauls**, transferred.

W. C. Sloan, having returned from service overseas resumed his duties as superintendent of the Pasco division of the Northern Pacific, with headquarters at Pasco, Wash., on February 22.

William K. Hallett, who has been appointed general superintendent of the Bangor & Aroostook, with headquarters at Bangor, Maine, as has already been announced in these



W. K. Hallett

columns, was born on March 15, 1873, at Fredericton, N. B., and was educated in the grammar schools. He began railway work on November 11, 1893, with the Canada Eastern, now a part of the Canadian National Railways, as station agent. He remained in that position until July of the following year, and then went to the Bangor & Aroostook as a telegraph operator and agent, and has been in the continuous service of that road ever since. In January, 1896, he was appointed despatcher, and

from June, 1898, to June, 1903, was chief clerk to superintendent. He then served as assistant superintendent until March, 1905, and was then appointed division superintendent, which position he held until January 1, 1919, when he was promoted to general superintendent of the same road, as above noted.

Financial, Legal and Accounting

T. S. Ford has been appointed federal auditor, and **C. H. Hueston** has been appointed acting federal treasurer and paymaster of the Des Moines Union, the Iowa Transfer, the Des Moines Western and the Des Moines Terminal, with headquarters at Des Moines, Iowa.

Traffic

J. R. Wells has been appointed assistant general passenger agent of the Southern Railroad, with office at New Orleans, La.

Engineering and Rolling Stock

A. L. Morgan has been appointed chief engineer of the Des Moines Union, the Iowa Transfer, the Des Moines Western and the Des Moines Terminal, with headquarters at Des Moines, Iowa.

C. L. Bunch, shop superintendent of the Southern Railroad, at Spencer (N. C.) shop, has been promoted to master mechanic of the Memphis division, with office at Sheffield, Ala., vice **J. W. Gibbs**, resigned.

George W. Rink, mechanical engineer of the Central of New Jersey, has been appointed assistant superintendent of motive power, with office at Jersey City, N. J. Mr. Rink



G. W. Rink

was born on September 4, 1875, at New York, and graduated from Cooper Institute, New York City, with the degrees of B. S. and M. E. He began railway work on March 14, 1892, as a machinist apprentice on the Erie Railroad. From March, 1896, to March, 1899, he served as a machinist and shop draftsman, and then to September, 1900, as a draftsman on the Northern Pacific. He then entered the service of the Central of New Jersey, as a draftsman and from 1901 to 1902, was roundhouse foreman and inspector of

new equipment. Later he was engaged in road testing of locomotives and as draftsman, until 1903, when he was promoted to chief draftsman. From April, 1904, to January, 1909, he was instructor of apprentices, and then was appointed mechanical engineer, which position he held until his recent appointment as assistant superintendent of motive power of the same road, as above noted.

J. E. McQuillen, mechanical superintendent of the Gulf, Colorado & Santa Fe, the Fort Worth & Rio Grande, the St. Louis-San Francisco & Texas, the Texas Midland, the International & Great Northern (from Spring to Fort Worth and the Madisonville branch), the Fort Worth Belt, the Fort Worth Union Passenger Station, and the Houston Belt and Terminal, has also been appointed mechanical superintendent of the Fort Worth & Denver, the Wichita Valley, the Missouri, Kansas & Texas (west of Whitesboro), the Wichita Falls & Northwestern, the Abilene & Southern and the Quanah, Acme & Pacific, with headquarters at Galveston, Texas.

William S. Wilson, who has been appointed division engineer of the Pennsylvania Railroad, with office at Oil City, Pa., as has already been announced in these columns, was born on March 12, 1880, at Philadelphia, Pa., and graduated in June 1899, from the Central Manual Training School, Philadelphia. The following August he began railway work in the construction department of the Pennsylvania Railroad, and in 1900 was transferred to the office of the engineer maintenance of way, at Philadelphia. In November, 1902, he was promoted to assistant supervisor on the Trenton division, and later was transferred to the Pittsburgh division. He subsequently served as supervisor consecutively on the Bellwood division, the Erie division, and the Pittsburgh division until his promotion on February 1, 1919, to division engineer of the Allegheny division, with headquarters at Oil City, Pa., as above noted.

Corporate Operating

J. J. Horn has been appointed superintendent of the Kenora division of the Canadian Pacific, with headquarters at Kenora, Ont., to succeed **J. L. Jamieson**.

J. L. Jamieson, superintendent of the Kenora division of the Canadian Pacific, with headquarters at Kenora, Ont., has been appointed superintendent of the Vancouver division of the same road.

Traffic

F. A. Mitchell has resigned as general traffic manager of the Manistee & North Eastern, and that office has been abolished. **D. Riely**, general freight and passenger agent, will handle matters pertaining to traffic, with headquarters at Manistee, Mich.

A. C. Albertson has been appointed general agent of the passenger department of the Canadian Pacific, with office at Minneapolis, Minn., succeeding **R. S. Elworthy**, who has been transferred to Chicago, as general agent of the Canadian Pacific Ocean Services, Limited.

E. F. L. Sturdee, general agent of the passenger department of the Canadian Pacific, at Boston, Mass., has been transferred to Seattle, Wash., and **L. R. Hart**, general agent at Buffalo, has been transferred to Boston to succeed Mr. Sturdee. **Captain George O. Walton**, formerly city passenger agent at New York, who has been serving in the ordnance department and has been connected with the supply department of the artillery branch, at Washington, has just been relieved of military duty, and has returned to the service of the Canadian Pacific, as general agent at Buffalo, to succeed Mr. Hart, effective March 1.

Purchasing

A. E. Cox, whose appointment as general storekeeper of the Canadian National, Western Lines, with headquarters at Winnipeg, Man., was announced in the *Railway Age* of February 21 (page 476),



A. E. Cox

was born at Huddersfield, Eng., in 1863, and received his education in private schools at Hamburg, Germany, and college at Huddersfield. Mr. Cox first entered railway service in 1883 as time keeper on the Canadian Pacific Western division, with headquarters at Moose Jaw, Sask., which position he held for four years, when he was appointed chief clerk in the stores department of the Manitoba & Northwestern. In 1893 he was appointed storekeeper when the Manitoba & Northwestern was absorbed by the Canadian Pacific, and the following two years was assistant to the superintendent of construction of the Ontario and Rainy River section of the Canadian Northern. Since 1912 he has been storekeeper of the same road, until his recent appointment as general storekeeper of the Canadian National.

Railway Officers in Military Service

Major B. O. Johnson, now in the Russian Railway Service Corps, engaged in reorganizing the Trans-Siberian Railway, has been promoted to Lieutenant-Colonel. Lieutenant-Colonel Johnson was superintendent of the Montana division

of the Northern Pacific when he entered military service in October, 1917.

Obituary

Pollok H. C. Remone, personal injury claim agent for the Wabash Railroad, with headquarters in St. Louis, died on February 17, at his home in Hinsdale, Ill., at the age of 44 years.

John F. Livingston, president of the Columbia, Newberry & Laurens, died in a hospital at Columbia, S. C., on February 24, at the age of 50.

Frank Tremble, superintendent of telegraph of the Texas & Pacific, and associated lines, at Dallas, Texas, died on February 20, from the effects of injuries received in an accident while making an inspection in a motor car on the line near Weatherford, Texas. Mr. Tremble was born in 1865, at Mattoon, Ill.; he had been in railway service since 1881, and since June, 1903, served as superintendent of telegraph until the time of his death.

Charles B. Compton, freight traffic manager of the Louisville & Nashville, with office at Louisville, Ky., died at his home in that city on February 24. He was born in 1854, at New Albany, Ind., and was educated in the high schools. He began railway work on August 1, 1871, with the Louisville & Nashville, and previous to January, 1882, was general agent of the same road at Birmingham, Ala. He was then promoted to general freight agent, and since April 1, 1901, served as freight traffic manager of the same road.

Carl Stradley, chief engineer of the Oregon Short Line, died on February 11, at Salt Lake City, Utah, of pneumonia. He was born in Indiana, where he received his education, and later moved with his parents to Colorado, and in 1886 began railway service on construction surveys for the Union Pacific. In 1889-90 he was engaged in surveys for the Pacific Short Line, between Lander, Wyo., and Ogden, Utah. In 1890 he was engaged in engineering work for the city of Ogden and later engaged in mining in Colorado, but returned to railroad service, becoming identified with new construction work on the Union Pacific. In 1901 he was engaged in location work for the Oregon Short Line, until appointed chief engineer, April 15, 1911, succeeding William Ashton, who resigned. Mr. Stradley was appointed assistant chief engineer of the Union Pacific System, including the Union Pacific, the St. Joe & Grand Island, and the Oregon Short Line when the government took over the railroads.



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The Y. M. C. A. Headquarters at This Point on the Archangel Front Are in a Box Car